

THE FIRST FEMALE STUDENT FROM MACEDONIA TO WIN A MEDAL AT INTERNATIONAL CHEMISTRY OLYMPIAD

As the “life” of the conferences, congresses and other scientific activities including some of the International Olympiads slowly goes back to normal, the IChO (International Chemistry Olympiad) still suffers the consequences of the global pandemic. The fact that the Olympiad was scheduled to take place in Tianjing, China, made the matters more difficult. China at the moment of the Olympiad was still struggling with increased number of COVID patients. Luckily, the organizers managed to pull out an amazing remote Olympiad concerning all aspects of this kind of competition: social, competitive, scientific etc. The designed problems were interesting and trending including up-to-date research about lithium-sulfur batteries, developing COVID-19 tests and quantitative analysis, chemistry of the chromium pigments, new development in the organic synthesis and so on. During the years, many of the problems have been published in the educational journals^{1,2} and the IChO event has gained considerable attention from both educational and scientific journals as well.^{3–5}

The students that are part of the Macedonian Olympic team are chosen through series of national competitions (municipal, then regional, ending with national) and selection process (selection and qualification competition). Through these strict process of selection only the best students is guaranteed to be part of the four-membered team. This year, after the selection of the four candidates, one of the students withdraw leaving the team with three members. After the consultations within SCTM, it was decided to participate at the IChO-2022 with three students and one official mentor instead of four students and two mentors. This was the first time in 8 years (since SCTM took over the leadership on this event), that the team has been decimated.⁶ Even in these circumstances, the students showed excellent results.

Two of the participants were experienced and were part of IChO last year.⁷ Both of them were in the final year of their high school period, while the third one has just finished the third year (Fig. 1):

- **Darko Stojchev**, student at 4th year in the Skopje City's' High School "Josip Broz Tito", Skopje (**bronze medal winner**);
- **Anja Spasovska**, student at 4th year in the Municipal High School "Goce Delchev", Kumanovo (**bronze medal winner**);
- **Filip Bojadjevski**, student at 3rd year in the Skopje City's' High School "Orce Nikolov", Skopje.

This year was Darkos' third participation^{7,8} and second bronze medal at this competition, while Anja had the chance to participate only once before.⁷ Filip is one of the most promising young chemists who performed extraordinary at the general and inorganic part of the theoretical test, having high score. It is interesting to emphasize that Anja was the first female student in the Macedonian team to ever win medal at the International Olympiads in chemistry.^{6–10}



Fig. 1. Participants at the International Chemistry Olympiad 2022 representing the Macedonian team (from left to right: Filip Bojadjevski, Anja Spasovska, Darko Stojchev)

This year Nanjing University in Tianjing, China was the host to 326 students from 84 countries from around the world. Also, 166 mentors and 140 invigilators were part of this event. The host enrolled over 1000 personal in order to organize this on-line competition flawlessly. The competition lasted 9 days from 10th of July till 18th of July 2022 and each day the organizer broadcasted different activities both for the students and the mentor all over the world.

Since 2015 when SCTM took over the organization of the national selection for the international competitions, the results are constantly improving. The first time when our team got two bronze medals was in 2018 at the 50th IChO and since then we manage to maintain our achievements hoping to improve in the near future. What is interesting is that, besides the decreased activity concerning the student's preparation, the individual performance is improving even in the pandemic years (Fig. 2). One of the explanations for this trend is probably due to the fact that these participants were extensively trained in 2019 and 2020. These generations will no longer compete in the upcoming years and the real effect of the absence of intensive training will reflect in IChO-2023. A support to this conclusion is the team results (Fig. 2b). In 2020 and 2021 when the lecture sessions were reduced and conducted online, the recently enrolled students had difficulties overcoming the obstacles, and the team scores plummeted due to their poor performance. These years (2020, 2021) our teams got only one bronze. For comparison, in 2018, 2019 and 2022, two bronzes were won each year.

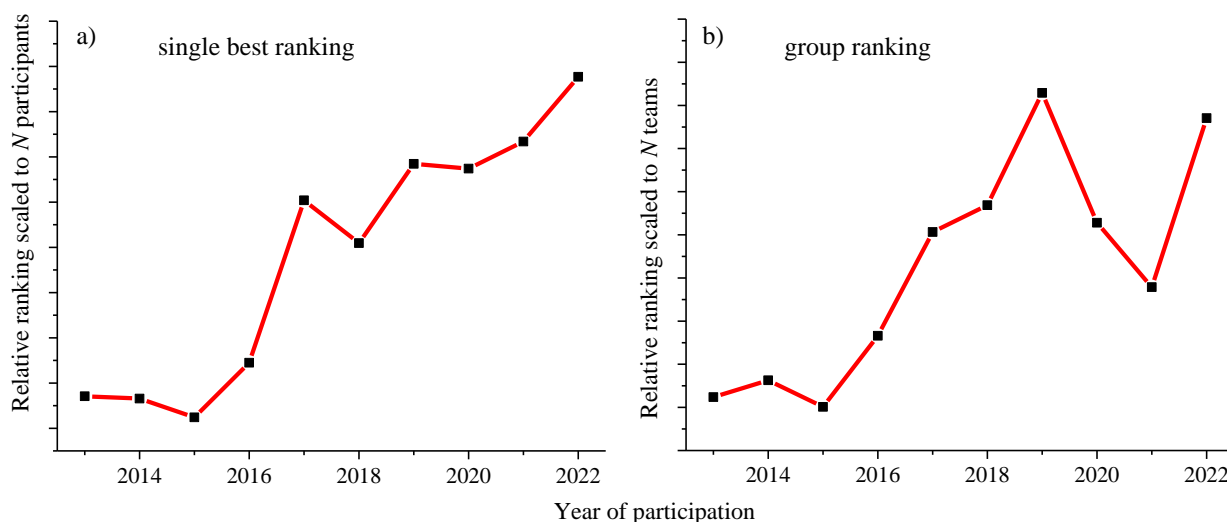


Fig. 2. Best relative ranking over the years of the (a) student with highest score and (b) entire team, scaled to the number of participants and top single result and team result, respectively.

Beginning from 2019, SCTM started participating at the International Mendeleev Olympiad. After 3 years of having great success (two bronze medals), due to financial difficulties, the Macedonian team had to withdraw from this year's competition that was held in Tashekent, Uzbekistan. We truly hope that in 2023, the financial situation will be much better and the traveling will not be restricted.

After three years of on-line editions and after the golden jubilee of IChO [4, 5], we are eager to the next year's jubilee – the 55th edition of the IChO-2023 that will be held, hopefully, onsite in Zurich, Switzerland.

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