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CNCC - Concurso Nacional de Crecimiento de Cristales de Uruguay: 10 years of a successful crystal growing competition for schoolchildren and more.

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During the International Year of Crystallography, in 2014, Uruguay held the first National Crystal Growing Competition (CNCC, for Concurso Nacional de Crecimiento de Cristales, in Spanish). It was organized by an interdisciplinary group of scientists, students and outreach officers grouped at Facultad de Química and Centro Universitario Regional Este of Universidad de la República. The main goal, aligned with the ones set by the IUCr, was to reach out to the community introducing them to the exciting world of crystals and crystallography by involving young people in growing a single crystal. The competition involved workshops, dictated by the organizers, to enable future tutors of the schoolchildren gain specific knowledge in crystal growth, keeping detailed records of experiments and presentation of results. In order to allow participants to get involved in the Worldwide Crystal Growing Competition organized by the IUCr part of the presentation by participants was a 3 minutes video that was judged together with the crystal. Crystals were judged by the weight and quality of the crystal grown and additional points were awarded for the records of the experiment in terms of creativity and scientific rigor. Throughout the first three editions (2014-2017) more than 800 people, ages 7 to 30, from around 100 schools throughout the country participated in the CNCC. It is worth mentioning, in addition, that participation was not limited to kids, anyone involved with the formal education system, even if receiving adult education in any context (including people in prisons) could participate. [1] Some participants also won prizes in the Worldwide Crystal Growing Competition in 2014, 2015 and 2017. [2]

The competition grew over the years, especially in the period 2014-2019 where a new category of competition was introduced. The creation of "Crystal gardens" allowed kindergarten to 6th grade primary school children participate in large classroom groups with their teachers, instead of the small groups recommended for single crystal work (an activity much harder to organize in a 20-30 children classroom without proper laboratory material and enough teachers). Over 3000 kids and Teachers participated during that period, coming from the 19 departments of the country with creations that overwhelmed the organizers and fellow competitors.

The outbreak of covid-19 pandemic in Uruguay (March/2020) got the organizer in the initial steps of organizing the 7th CNCC, and the group managed to organize a Crystal Growing Competition at Home that got more than 50 schoolchildren involved, growing crystals of sugar, salt and copper sulphate, with the help of their parents or close relatives during lockdown.[3] In 2021 an abbreviated competition was organized, running from August to October, after nationwide vaccination allowed to restart in-person school activities. The category of crystal garden was extended to secondary school kids to promote participation. Finally, 2022 deserved us great happiness, with a renewed CNCC (9th edition) including the organization of workshops for tutors again, gaining participants by the hundredths. The continued activity of CNCC -even through the pandemic period- was recognized by the producers of a science dissemination TV Program of Uruguay -Sobre Ciencia- and the results of CNCC-9 were announced on public television on November 2nd 2022. [4]

As we are writing this abstract we are organizing the closing of CNCC-9 and are getting ready to launch the activities of the 10th National Crystal Growing Competition of Uruguay that will run from March (competition presentation and opening) till December (closing ceremony). We just received confirmation of financial support from some sources and are getting excited about the presentation of the history of nine editions of CNCC and ongoing activities of CNCC-10 at IUCr26 Congress. A new logo, historical records, dissemination material and news can be found at our web page and social networks: <http://www.cncc.fq.edu.uy/>, Twitter: @cnccfqy, Instagram: @cnccfqy, Facebook: <https://www.facebook.com/cnccfqy/>.

[1] Alvarez et al. (2017); "Uruguay's National Crystal Growing Competition", *Blucher Material Science Proceedings 23a Reunião da Associação Brasileira de Cristalografia* 2(2), 30-33. DOI: 10.5151/23abcr-17

[2] Worldwide Crystal Growing Competition of IUCr. <https://www.iucr2014.org/participate/competition-winners/2017-winners>

[3] Aguiar et al. (2020); "A crystal growing competition at home: outreach activities during lockdown" IUCr Newsletter Vol 28, Number 3.

[4] <https://sobreciencia uy/ciencia-en-la-escuela-el-liceo-e-incluso-en-la-carcel/> - <https://youtu.be/wYMCdc7HgYU>

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