

“Crystallography and Crystallization MOOC: Empowering Secondary Schools Teachers through Online Learning”

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The content, objectives, and educational outreach impact of the MOOC "Crystallography and Crystallization. School Crystallization Contest", a free online course hosted on the Open UAH platform of the University of Alcalá (Alcalá de Henares, Spain) [1] are presented. This MOOC is part of a broader national initiative aimed at promoting crystallography and scientific thinking among secondary school students in Spain through active participation in the School Crystallization Contest. This competition, held annually in various Spanish regions, is organized by working groups composed of teachers and researchers –some of whom are also the authors of this MOOC- who collaborate to implement and adapt the contest locally.

The MOOC offers accessible, high-quality training on the principles of crystallography, nucleation and crystal growth, and basic laboratory techniques for crystallization. It is specifically designed to support secondary school teachers providing them with both theoretical knowledge and practical resources to guide their students in experimental projects.

Through videos, quizzes, downloadable materials, and real examples from past contests, the course fosters engagement and facilitates the integration of hands-on science in the classroom. The MOOC is currently in the final stages of development and will be available for educators and students in the upcoming academic year.

This contribution outlines the structure of the course, the profile of participants, regional collaborations, and the expected outcomes in terms of student participation and interest in STEM fields. This initiative exemplifies how a well-coordinated online educational tool can support nationwide scientific outreach and strengthen teacher-student-researcher networks.

[1] <https://open.uah.es/courses/>

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