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A MOOC in Nuclear- and Radio-Chemistry: from the design to the feedback

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In the recent years the loss of expertise in the nuclear- and radio-chemistry (NRC) is becoming an issue of concern in many aspects. Although this discipline is essential in many fields, few engaging curricula, few career prospects, along with a misperception of this subject, is causing a serious lack of NRC expertise in many parts of the world.

In the attempt to contribute to limiting this phenomenon through raising nuclear awareness, the Massive Open Online Course (MOOC) "Essential Radiochemistry for Society" has been developed by the support of experts from all Europe within the H2020 MEET-CINCH project. The consortium was composed of 12 institutions from 8 European countries, England and Norway, with a variety of expertise in many NRC applications. The MOOC has been the result of a collaborative reflection about the external context and the most appropriate way to face the challenge. Furthermore, the proper target group, and the most suited pedagogical approach were discussed.

The course is available since 2020 at the Polimi Open Knowledge platform (<https://www.pok.polimi.it/>) and yearly editions are available from September each year.

The MOOC addresses Bachelor students in chemistry, physics, engineering, and general science and medical areas with the intent of improving their awareness of NRC. With a series of lessons that include videos, infographics, articles, quizzes, exercises, and links, the user is guided to discover all the benefits of these disciplines to society, far beyond what is strictly related to nuclear energy.

Within the H2020 A-CINCH project, the MOOC editions are continuously monitored, maintained and enriched. Live webinars, held by experts from prestigious universities and research centers, have been organized for the purpose of keeping the course updated on both the most interesting aspects of NRC and cutting-edge scientific research.

The present work would like to describe the MOOC development process and discuss strong points and weakness of the followed strategy, according to the feedbacks collected in the first editions among students worldwide.

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