

Editorial Proc. UCANS IX Online Conference, March 28–31, 2022

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Based on nuclear processes initiated by low energy particle beams ($E \lesssim 70$ MeV) on stationary targets, compact accelerator-based neutron sources (CANS) have been developed and installed at a number of universities and research institutes or corporations world-wide over the last few decades. These small sources have provided continuous impact in fundamental nuclear physics as well as in material sciences, engineering, metrology, and health. In recent years, partly driven by the closing of several reactor-based neutron sources and the desire for local and mobile neutron sources, and partly by progress in high current proton accelerator systems, several efforts have developed to design, construct, and operate powerful high-current CANS with the aim to be used as future small to medium-scale neutron sources to complement spallation and reactor based sources in a world-wide neutron ecosystem.

The Union for Compact Accelerator-driven Neutron Sources (UCANS) has organized regular meetings to discuss the state of the art and developments on this topic since 2010. The UCANS IX conference was planned to be held in Wako, Japan in November 2020. Due to the global coronavirus outbreak the conference could not happen as planned. It had to be postponed and finally could be organized as a virtual conference from March 28 to 31, 2022 with a strong world-wide attendance of many scientists and researchers.

The virtual conference covered a very wide range of topics including most aspects of compact sources, such as accelerator systems, neutron targets, moderators, detectors, neutron scattering instrumentation, radiography, isotope production and nuclear data evolution and medical applications as documented at the conference website (ucans9.org). With a large number of recommended presentations and discussions at the virtual conference the participants and organizers joint forces to publish presented works within a proceedings volume in the Journal of Neutron Research.

The contributions published are grouped around work devoted to the topics of accelerator development, neutron source development, cryogenic moderators and various applications using CANS facilities.

While these articles represent only a fraction of all of the presented contributions within the UCANS IX Conference, they demonstrate the progress and state-of-the-art in this rapidly developing field. Upcoming conferences, workshops and UCANS meetings will show further progress and developments and the present proceedings support the discussions and activities to develop and optimize CANS.

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