New opportunities for fission studies at JYFL*

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Over the past few years the Accelerator Laboratory at the Department of Physics, University of Jyväskylä (JYFL) has experienced a period of rapid expansion. Now, in addition to the K=130 cyclotron [1] that was inaugurated on October 8, 1991, there are two more accelerators available for research: the second cyclotron and a Pelletron. To accommodate the new MCC30/15 cyclotron (Fig. 1) a new annex building has been constructed during the 2008/2009 right next to the existing experimental hall. MCC30/15 [2], designed under the supervision of P. Bogdanov at NIIEFA in St. Petersburg, Russia, is a high intensity light ion cyclotron intended for IGISOL research and applications. It accelerates protons to 30 MeV and deuterons to 15 MeV. The new machine will not only allow for experiments with high intensity proton and deuteron beams but will also increase the available beam time at K=130. The third accelerator is a 1.7 MeV Tandem, commissioned in 2007. Although the Pelletron Tandem is primarily intended for material physics, it is also used for target quality evaluation.

The new equipment at JYFL opens new opportunities also for the studies of all aspects of fission, the synthesis of superheavy elements, and the study of exotic nuclei. The research is carried out in close collaboration with Dubna, Khloplin Radium Institute, Kurchatov Institute and research groups from Darmstadt, Legnaro, Napoli and Tubingen. The presentation will review the planned and ongoing experiments at JYFL.

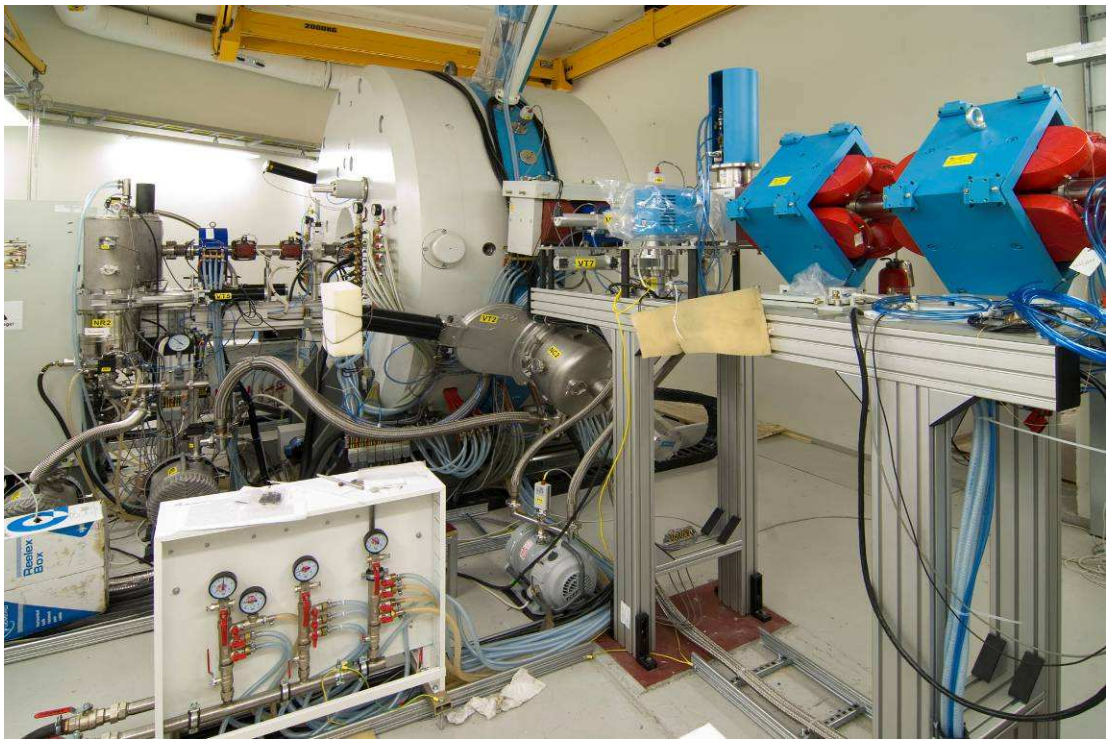

Fig. 1. The new MCC30/15 cyclotron at JYFL.

[1] https://www.jyu.fi/fysiikka/en/research/accelerator/accelerator/k130/
[2] https://www.jyu.fi/fysiikka/en/research/accelerator/accelerator/index_html/mcc30

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