

The southern hemisphere's first X-band radio-frequency test facility at the University of Melbourne.

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The first Southern Hemisphere X-band Laboratory for Accelerators and Beams (X-LAB) is under construction at the University of Melbourne, and it will operate CERN X-band test stand containing two 12GHz 6MW klystron amplifiers. By power combination through hybrid couplers and the use of pulse compressors, up to 50 MW of peak power can be sent to any of 2 test slots at pulse repetition rates up to 400 Hz. The test stand is dedicated to RF conditioning and testing CLIC's high gradient accelerating structures beyond 100 MV/m. It will also form the basis for developing a compact accelerator for medical applications, such as radiotherapy and compact light sources. Australian researchers working as part of a collaboration between the University of Melbourne, international universities, national industries, the Australian Synchrotron -ANSTO, Canadian Light Source and the CERN believe that creating a laboratory for novel accelerator research in Australia could drive technological and medical innovation.

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