

The Beams and Applications Seminar Series

Development of a high-power electron linac for irradiation applications

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Bldg. 401, Room B-4100

Wednesday January 18, 1:00 pm

Host: Ali Nassiri

Abstract:

There are growing demands on electron RF linacs for industrial applications, such as radiation processing, industrial X-ray imaging, and radiosurgery. Radiation processing requires a higher electron beam power to increase the processing speed. PAL and POSTECH developed a high-power electron linac for irradiation applications adopting L-band RF technology. It is capable of producing a 10-MeV electron beam with limited undesirable neutron generation and a beam power of 30 kW. The accelerating structure is a disk-loaded waveguide operated with $2\pi/3$ -mode traveling-waves. The bunching cells are included in the main accelerating section for a compact structure suitable for industrial applications. Commissioning results of the L-band linac are presented. A brief introduction on a C-band SW accelerating structure for industrial X-ray imaging and SRF cavities for the heavy ion linac of the Korean rare isotope accelerator will be presented in this talk.

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