

## **Status of the ERL Project in Japan**

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Future light sources based on the Energy Recovery Linac (ERL) are expected to bring innovation to the synchrotron radiation (SR) science. Our Japanese collaboration team plans to construct a 5-GeV ERL which can produce super-brilliant and ultra-short pulses of SR as well as can be a driver for a proposed X-ray free-electron laser oscillator (X-FELO). In order to establish key technologies for the ERL project, we are conducting extensive R&D efforts, including the development of high-brightness DC photocathode guns, superconducting (SC) cavities for both injector and main linacs, and some other technologies. To demonstrate the production, acceleration, and recirculation of ultra-low emittance beams using these key technologies, we are constructing the Compact ERL (cERL) in KEK. In FY2009, we prepared the infrastructure for the cERL which includes refurbishing the building (the East Counter Hall), renovation of cooling-water system and electrical substation, installation of a liquid-helium refrigerator, and installation of some of the rf sources. We present up-to-date status of the ERL and the Compact ERL projects in Japan.