**R&D for Compact Electron Cyclotron Resonance Accelerator**

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A novel accelerator, **e**lectron **C**yclotron **R**esonance **A**ccelerator (eCRA) [1], is under development for efficient production of high power electron and x-ray beams for medical, research, sterilization, and national security applications, so as to replace radioactive materials. It is a highly compact and robust device with a room-temperature single-cell RF cavity as the accelerator structure. Furthermore eCRA can produce a continuous ampere-level high current output with a self-scanning accelerated energetic e-beam, obviating need for a separate beam scanner. Numerical simulations and engineering designs including beam matching and x-ray generation have been carried out. A demonstration/calibration version of eCRA is being built at Brookhaven National Lab (BNL) supported by DOE, NNSA, and BNL.

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References:

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