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## Tritium burning in inertial electrostatic confinement fusion facility<sup>†</sup>

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A tritium burning experiment is conducted in order to investigate the enhancement of the neutron production rate in an inertial electrostatic confinement fusion (IECF) facility. The facility is designed to be shielded from the outside for tritium safety, and a getter pump is used for evacuating the vacuum chamber and feeding the fuel gas. A D-T gas mixture with 93% deuterium and 7% tritium is used, and its neutron production rate is measured to be 5–8 times more than that of pure deuterium gas. Moreover, the results show good agreement with a simplified theoretical estimation of the neutron production rate. After the tritium burning, the exhausted fuel gas undergoes a tritium recovery procedure through a water bubbler device. The amount of gaseous tritium released by the developed IECF facility after the tritium burning is verified to be much less than the threshold set by regulations.

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