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Laser-induced wakefield acceleration by using density-tapered gas-cell MINSEOK KIM, INHYUK NAM, SEUNGWOO LEE, HYYONG SUK, Gwangju Inst of Sci & Tech — The plasma sources with upward density gradient can be used to increase a dephasing length and an accelerating field in laser wakefield acceleration (LWFA) mechanism. As a result, the electron energy accelerated is expected to be increased and we developed a density-tapered gas-cell on this account. Using a 20 TW Ti:Sapphire laser constructed at GIST, we performed the acceleration experiments with the gas-cell and gas-jet with density-gradient. In this presentation, the results of acceleration experiments will be presented in detail.

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