

Thesis Title	A Construction of a Transversely Excited Atmospheric Carbondioxide Laser
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ABSTRACT

TEA-CO₂ laser is a pulse laser with high peak power. The electric field is used to pump the gas medium in the perpendicular direction to the laser axis with the help of preionization circuit. The volume of laser medium containing in the laser system is $1.4 \times 1.4 \times 30 \text{ cm}^3$. The constructed laser system is able to emit laser energy 1 joule per pulse in mixture of CO₂ : N₂ : He for the ratio of 1 : 1.5 : 2.5 at total pressure 1020 mbar. In addition, the homogeneous discharge can be operated at a higher concentration of CO₂ : N₂ : He for the ratio of 2 : 1 : 1