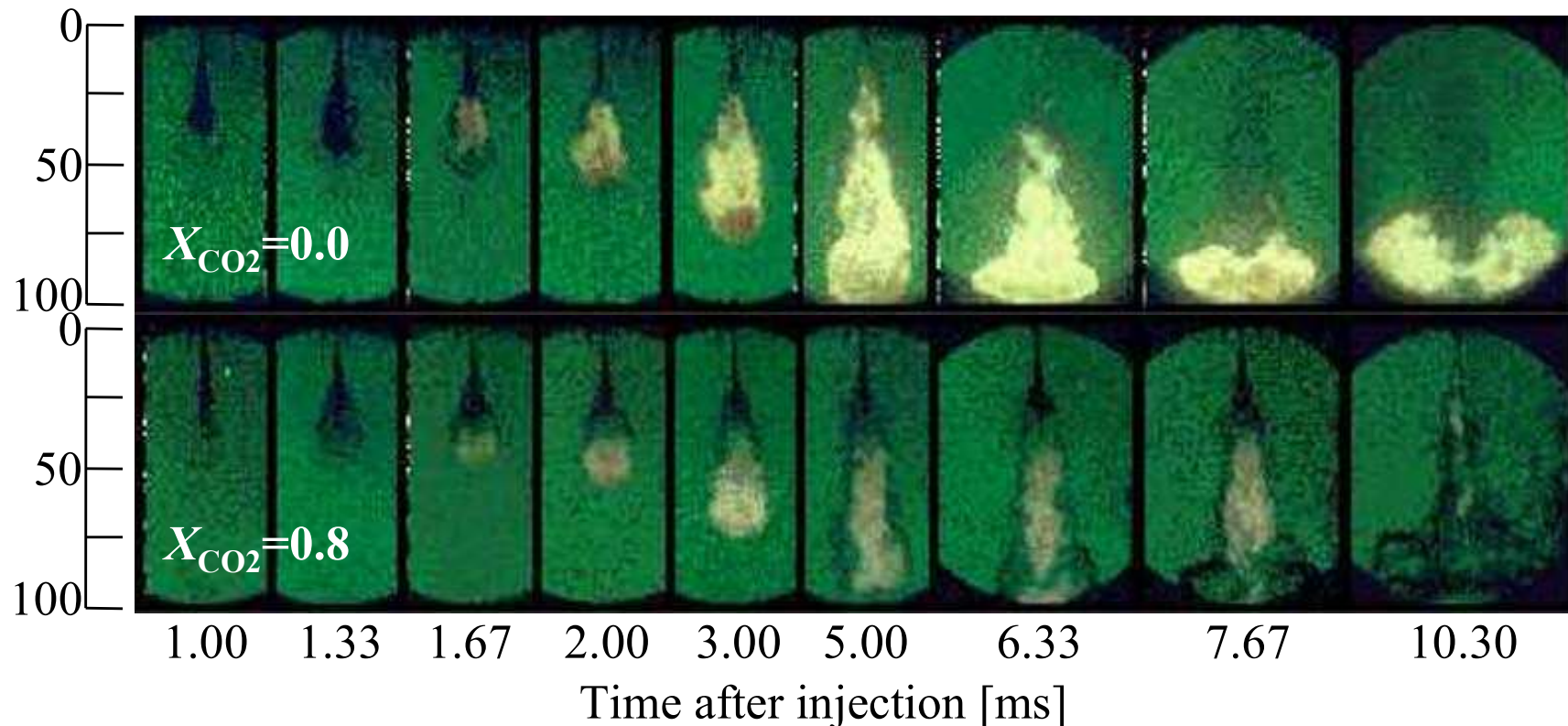
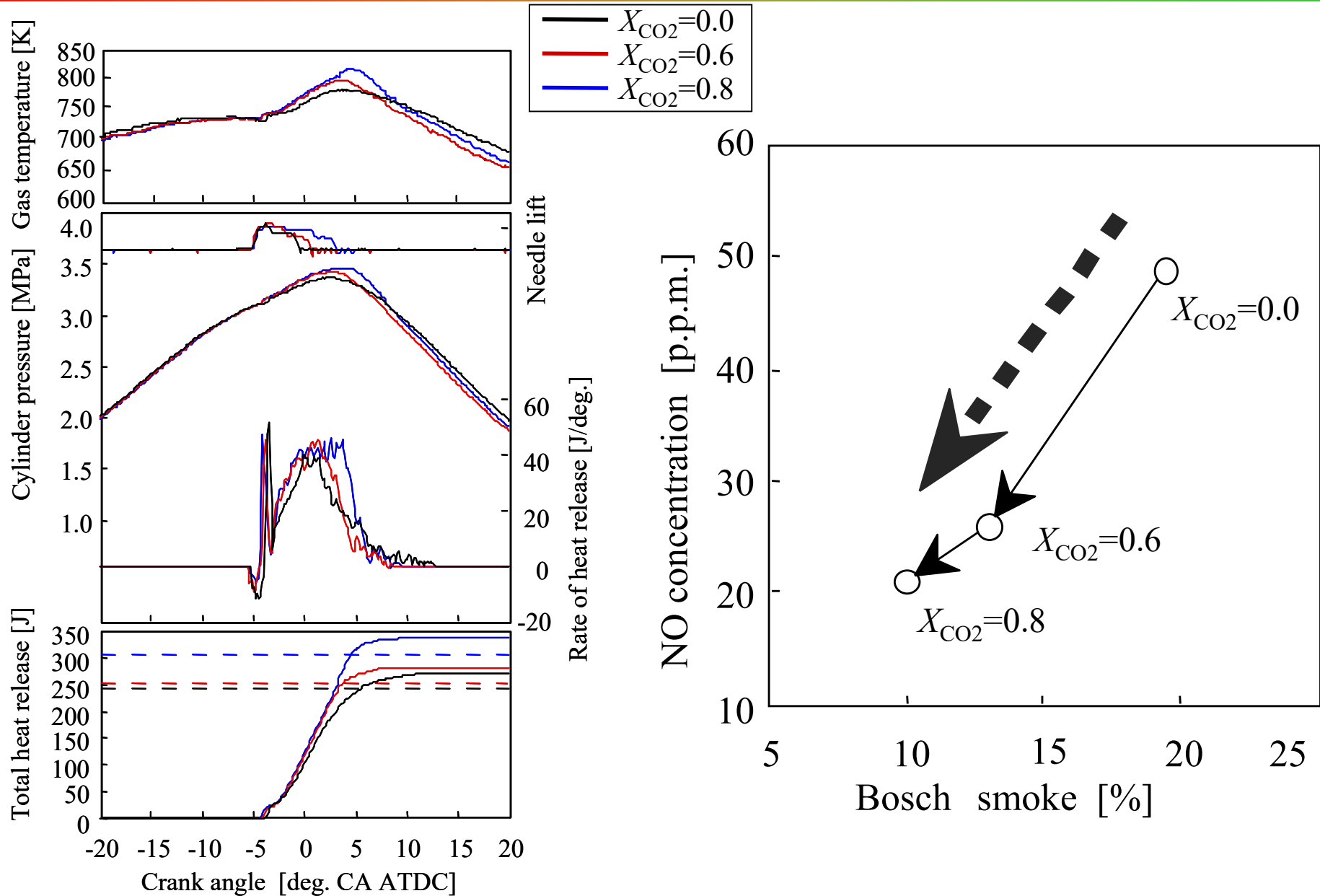


液化CO₂-軽油混合燃料

- 低圧噴射方式の採用 → 熱効率の維持・向上
- CO₂の混合に伴う減圧沸騰噴霧の形成 → 噴霧の微粒化・蒸気化の促進
- CO₂噴霧内部EGR → NO低減 (火炎温度低下)



液化CO₂-軽油混合燃料



ガス・ガソリン-軽油混合燃料

- ・ 燃料による低エミッション・高熱効率燃焼法の構築
- ・ 燃料の物理的・化学的特性を生かした噴霧・燃焼過程の時空間制御

・ Formation of two-phase region

➡ Possibility of flash boiling spray

・ Improvement of fuel transport properties

➡ Optimization of specific heat, viscosity, etc.

・ Effective liquefaction of gaseous and solid fuels

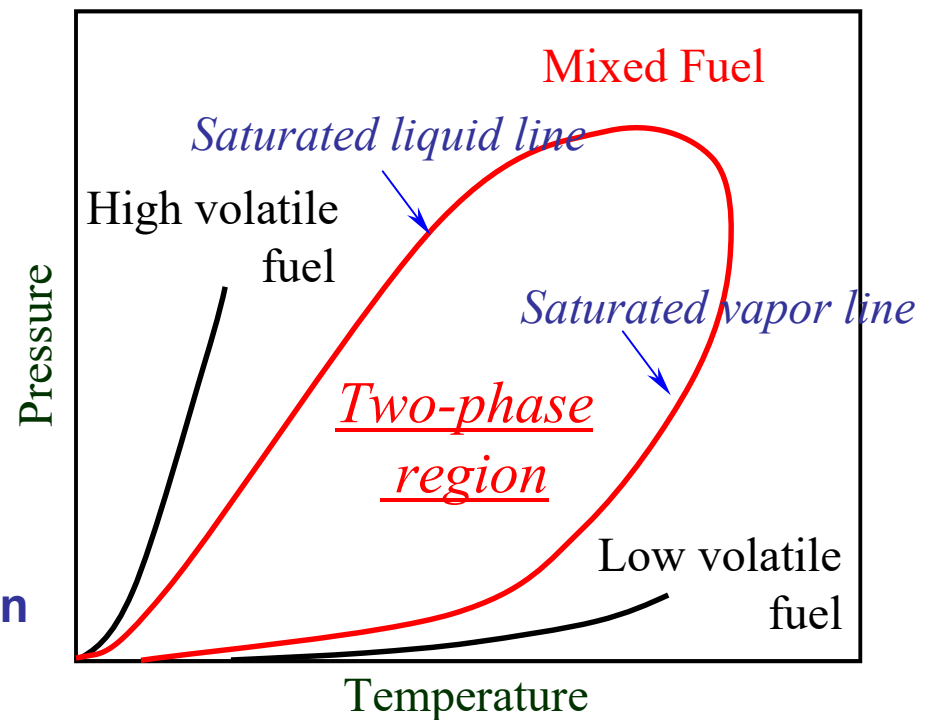
➡ Useful utilization of fuels for engine systems

・ Capability of combustion control

➡ Control of combustion process by changing the mixing ratio

・ Control of the ignitability and HC emission

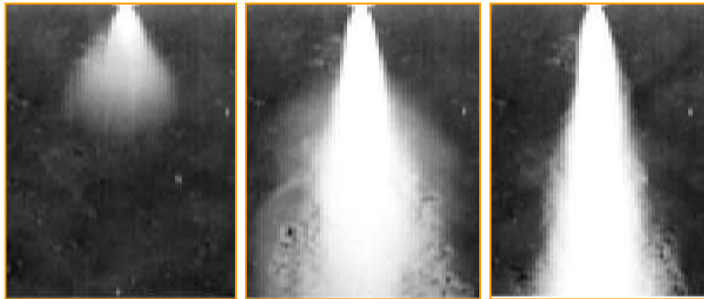
➡ High Octane number fuel→Ignition Control
High Cetane number fuel→Lower HC emission



減圧沸騰噴霧とエンジン性能

Characteristic of Flashing Spray

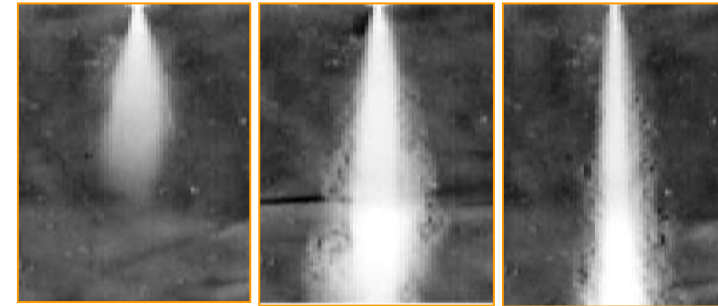
減圧沸騰噴霧



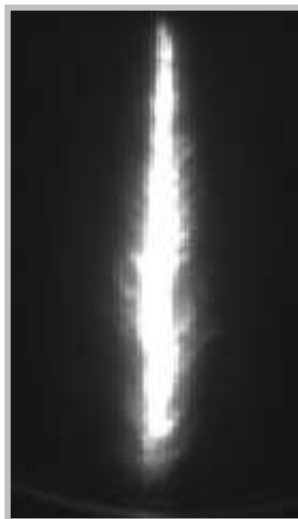
in addition



混合燃料噴霧



Inner Structure of Flashing Spray



W/O Flash Boiling



With Flash Boiling

Engine Experiment

