



# Low Temperature Combustion with Thermo-chemical Recuperation to Maximize In-use Engine Efficiency

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- LTC/HCCI show promise for low NO<sub>x</sub> emissions, but power density is low and control is difficult.
- Using Thermo-chemical recuperation, part of the fuel stream will be reformed using exhaust heat.
- The reformed, hydrogen-rich stream and the original fuel stream will both be used to aid in control.
- System and reaction modeling favor steam for reforming.
- Modeling will assess the use of high displacement, low imep options.
- With LTC/HCCI and reduced cooling burden, 10% fuel economy gain is targeted.
- Project is mid-Phase 1, with a total of three phases.
- Experimental research and control optimization are in phases 2 and 3.