

The Effects of Fuel Composition and Compression Ratio on Thermal Efficiency in an HCCI Engine



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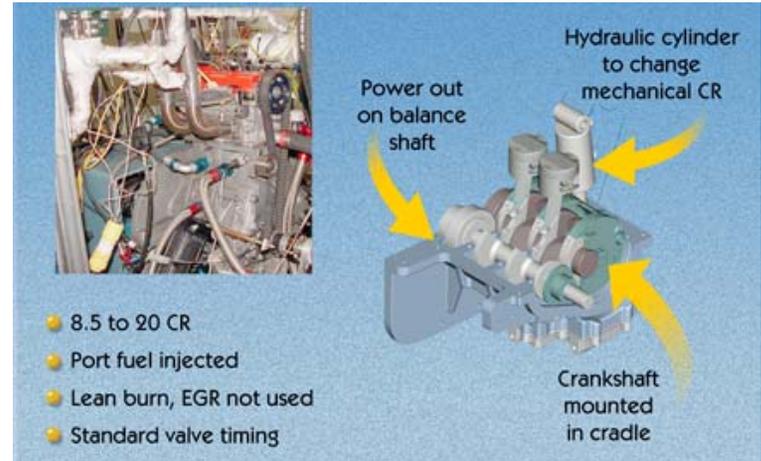
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- Compression ratio can be used to control HCCI combustion
 - High octane number fuels require higher CR to achieve ignition
 - Does efficiency increase with CR?
- 2-cylinder variable CR research engine, wide octane number range
- Complex relationship between fuel composition, CR, pressure rise rate, thermal efficiency, and CR

Poster P 14



	wt% toluene	LHV (MJ/kg)	RON	MON
n-heptane	0	44.56	0	0
TF25	25	43.57	37	31
TF50	50	42.58	62	50
TF75	75	41.59	88	76

