Supplement

Table S1. Fuel Properties.

	JP-8	Blend-1	FT-1	Blend-2	FT-2
Feedstock	Petroleum	Petroleum & Natural Gas	Natural Gas	Petroleum & Coal	Coal
Sulfur (ppm by mass)	1148	699	19	658	22
Alkanes (% vol.)	50	not measured	>99	not measured	88
Alkenes (% vol.)	0.9	0.6	0	3.3	3.8
Aromatics (% vol.)	18.6	8	0	9.1	0.6
Naphthalenes (% vol.)	1.6	0.8	0	0.8	0
Flash Point (°C)	46	43	41	46	42
Specific Gravity[a]	0.82	0.78	0.74	0.79	0.76
Freezing Point (°C)	-50	-60	-54	-60	<-80
Viscosity at -20°C (mm^2/s)	4.7	3.3	2.6	4.1	3.6
Cetane Index	41	46	58	45	51
H Content (% mass)	13.6	14.5	15.5	14.3	15.1
Heat of Combust. (MJ/kg)	43.3	43.8	44.4	43.8	44.1
Fuel H/C ratio	1.88	2.02	2.19	1.99	2.12

3 [a]Specific gravity is defined as the density of the fuel relative to water (dimensionless)

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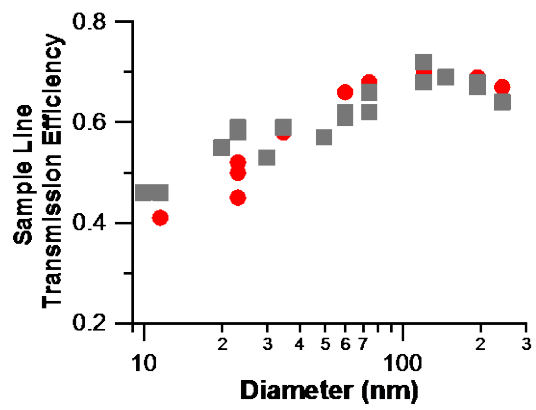
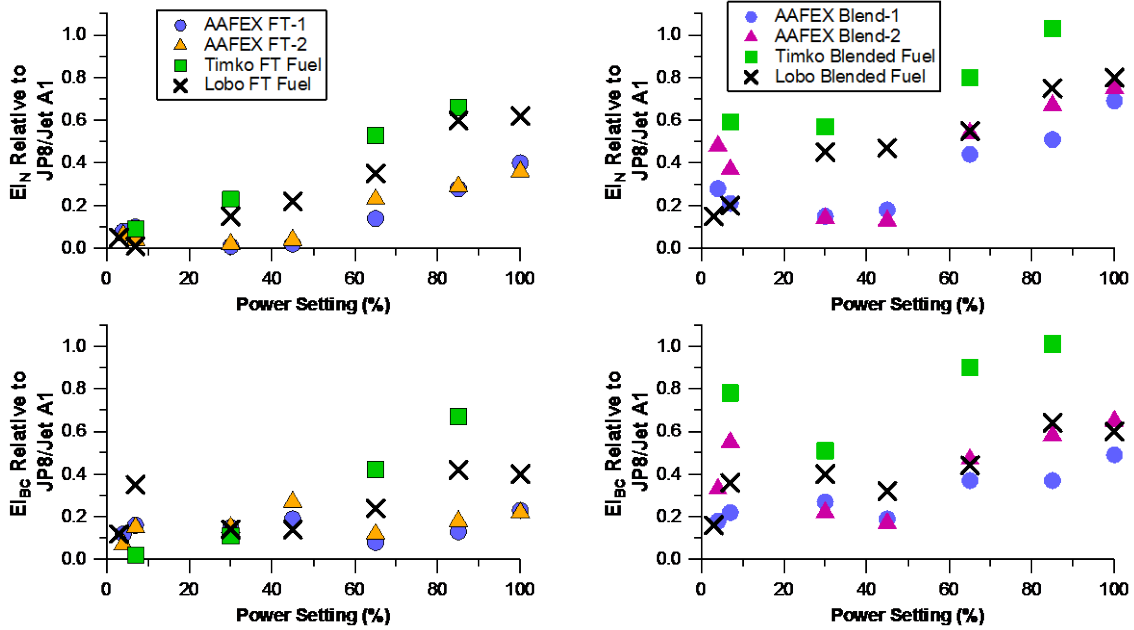1

2

3   Fig. S1.   Sample line transmission efficiencies behind the #3 engine at 1 m

4   (red) and 30 m (grey).

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3 Fig. S2. Relative emission indices for the current study, Timko et al. (2010)

4 and Lobo et al. (2011). EI_N values for FT fuels (left, top) and 50/50 blended fuels (right, top)

5 are normalized to a standard fuel (JP-8 for AAFEX and Timko et al.; Jet A1 for Lobo et al.).

6 Similarly, normalized EI_{BC} values are shown in the bottom panels. Values are directly from

7 Table 5 in Timko et al. and approximated from Figure 2 in Lobo et al. Data is from the #3

8 engine solely.

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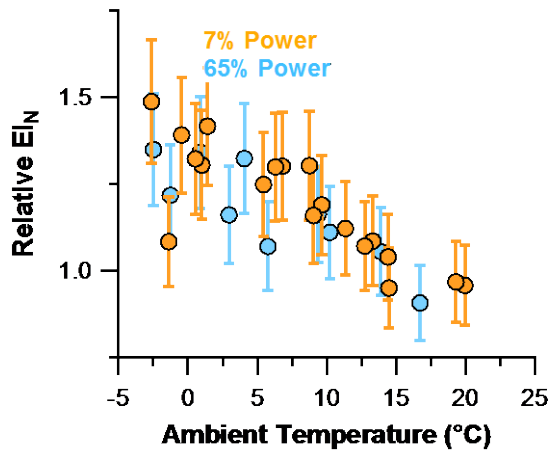
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3   Fig. S3. JP-8 $EI_N(T)$ plotted relative to the interpolated EI_N at 15℃ (the ICAO

4   standard temperature) for 7 and 65% power. Data is from the #2 engine solely. Measurement

5   uncertainties of 12% are shown by the error bars.