

A CORRELATION OF DIESEL ENGINE PERFORMANCE WITH MEASURED NIR FUEL CHARACTERISTICS

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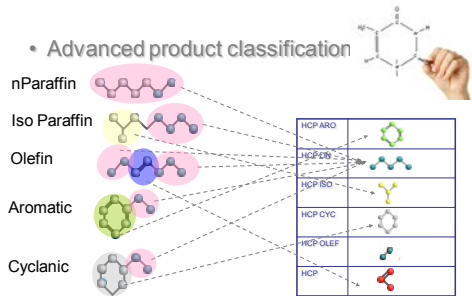
Alain Lunati, Oswin Galtier, Eric Hermitte, SP3H



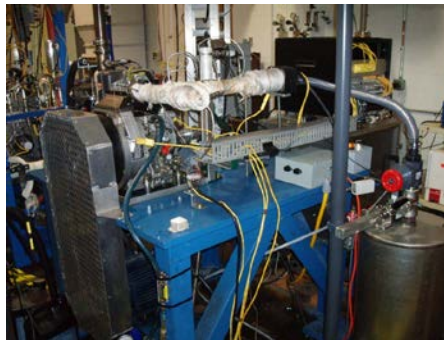
Monday, P-02

Can an NIR fuel sensor can be used to provide fuel information to help adjust control parameters for changing fuel characteristics???

SP3H sensor



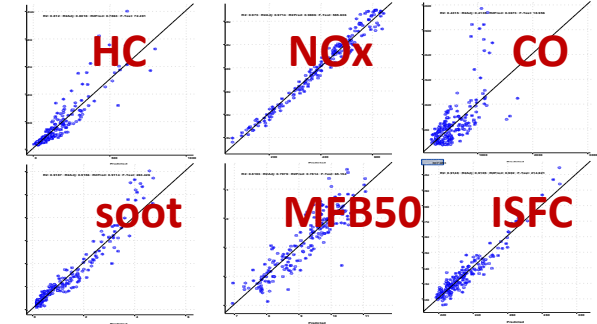
19 diesel fuels



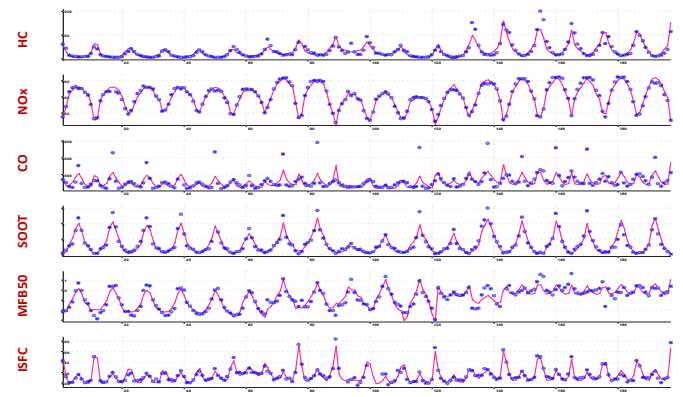
engine

Data analysis

	P_NAPH	P_LIGHT	P_MEDIUM	P_HEAVY	P_FAME	Tcharge	airflow	fuelflow	AFR						
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	25.94552	8.49869	0.114201	74.46252
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	25.96934	8.47005	0.102463	52.16997
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	26.25298	8.374439	0.223779	37.43529
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	26.56009	8.310765	0.24935	33.33575
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	26.8921	8.242186	0.285895	28.83382
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	27.0913	8.144572	0.306732	26.55563
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	27.34542	8.20358	0.270561	29.6332
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	27.16074	8.291356	0.230625	35.96242
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	26.97776	8.156242	0.217877	37.4492
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	26.66434	8.395217	0.166212	50.51268
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	26.31387	8.473856	0.09931	85.34769
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	27.72441	8.484292	0.098861	85.87398
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	28.9339	8.342199	0.187304	44.54684
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	28.41862	8.366927	0.216803	38.59519
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	28.6885	8.297846	0.242132	34.27398
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	29.1273	8.200325	0.293389	27.95666
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	29.4994	8.131452	0.315481	25.77603
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	29.48688	8.141504	0.284564	28.61347
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	29.49565	8.206999	0.247983	33.09852
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	29.3536	8.356399	0.19962	41.86358
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	28.705	8.412787	0.150677	55.83867
0% biodie	1	0.408	0.348	0.023	0.898	0.074	0.122	8.1	11	5.1	0	27.83322	8.382451	0.126138	66.45797
5% biodie	2	0.414	0.34	0.029	0.891	0.069	0.116	8.2	11.5	5.1	4.3	25.74823	8.460019	0.132255	54.0243
5% biodie	2	0.414	0.34	0.029	0.891	0.069	0.116	8.2	11.5	5.1	4.3	26.0767	8.17425	0.165122	50.92988
5% biodie	2	0.414	0.34	0.029	0.891	0.069	0.116	8.2	11.5	5.1	4.3	26.5644	8.380762	0.205122	40.86077
5% biodie	2	0.414	0.34	0.029	0.891	0.069	0.116	8.2	11.5	5.1	4.3	26.7673	8.316223	0.23112	35.98575
5% biodie	2	0.414	0.34	0.029	0.891	0.069	0.116	8.2	11.5	5.1	4.3	27.19932	8.206714	0.281875	29.11562
5% biodie	2	0.414	0.34	0.029	0.891	0.069	0.116	8.2	11.5	5.1	4.3	27.44438	8.17799	0.306401	26.69271
5% biodie	2	0.414	0.34	0.029	0.891	0.069	0.116	8.2	11.5	5.1	4.3	27.82112	8.102666	0.290061	28.18725
5% biodie	2	0.414	0.34	0.029	0.891	0.069	0.116	8.2	11.5	5.1	4.3	27.93323	8.218889	0.24451	33.75209
5% biodie	2	0.414	0.34	0.029	0.891	0.069	0.116	8.2	11.5	5.1	4.3	27.76927	8.285963	0.204993	40.42568



YES!!!



RUN ORDER OF EXPERIMENTS