Supporting Information:

Table A.1. Measurement parameters of carbon analyzer and PI-ToF-MS system.

Carbon Analyzer (DRI 2000)	
Calibration gas	Methane
Carrier gas	Helium
Gas flow	50 mL/min
Temperature program "improveA"	OC1: 25 °C-140 °C OC2: 140 °C-280 °C OC3: 280 °C-440 °C OC4: 440 °C-580 °C OC5: 580 °C-740 °C OC6: 740 °C-840 °C OC7: 840 °C-900 °C
Mass spectrometer (Stefan Kaesdorf, Munich, Germany)	
Calibration gas mixture	Toluene (m/z: 92) + n-Propylbenzene (m/z: 120)
ND:YAG laser	Spitlight 400, Innolas GmbH, Krailling, Germany
Voltage of Multi Channel Plate (MCP)	3500 V
Laser Voltage	520 V
Laser wavelengths	266 nm (REMPI); 118 nm (SPI)
Laser pulse frequency	20 Hz

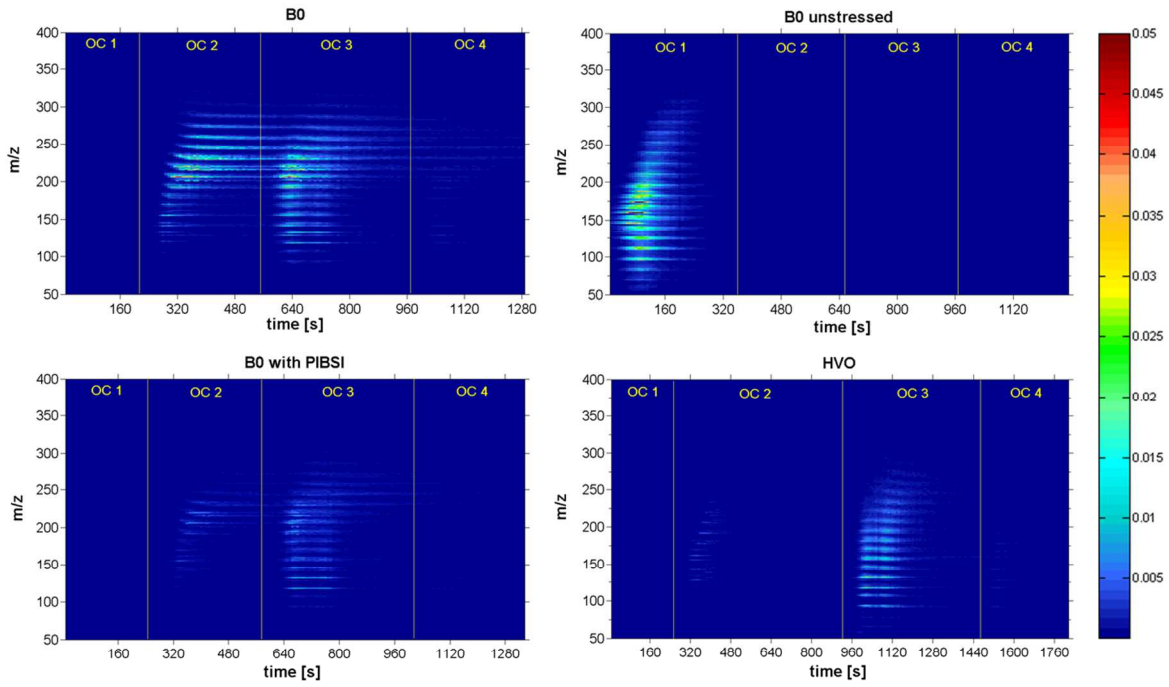

Fig. A.1. REMPI-MS-signals of measured ring precipitates, SPI-measurement of unstressed Diesel fuel put on filter is included.

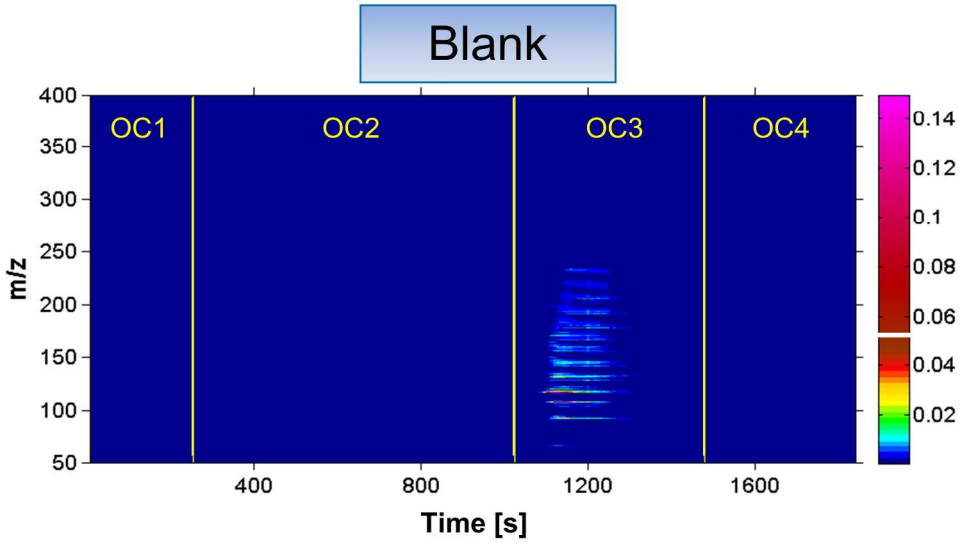

Fig. A.2. REMPI-MS-signals of a blank ring.

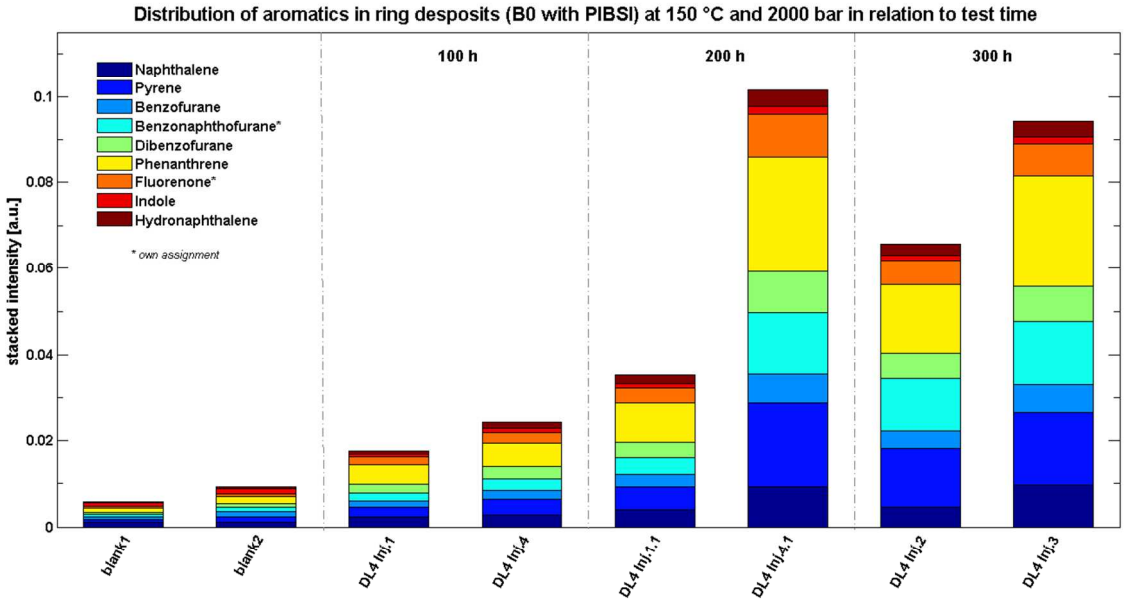

Fig. A.3. Aromatic species in ring deposits in relation to test time in comparison with two blank ring measurements.

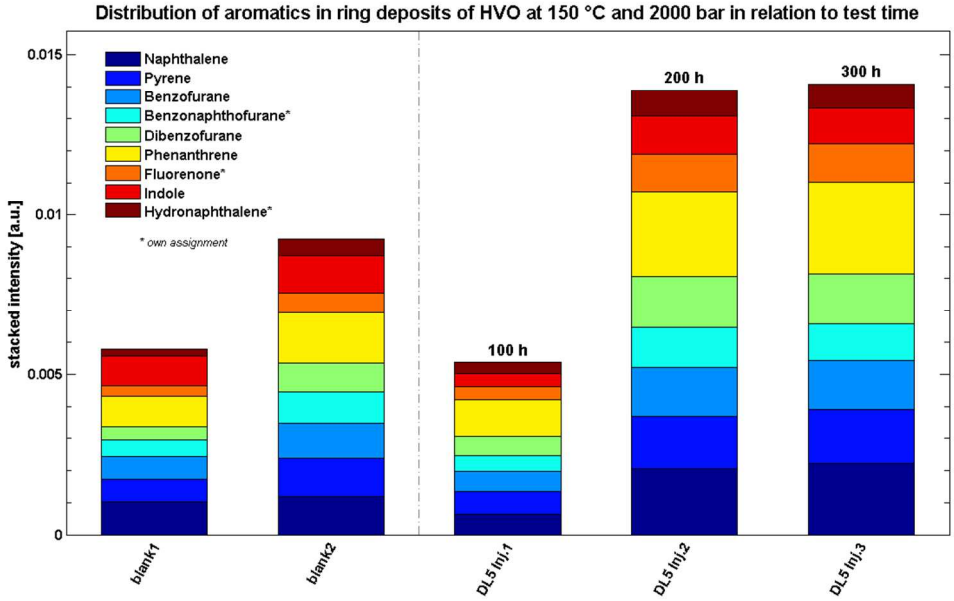

Fig. A.4. Aromatic species in ring deposits using HVO as fuel in comparison with two blank ring measurements.

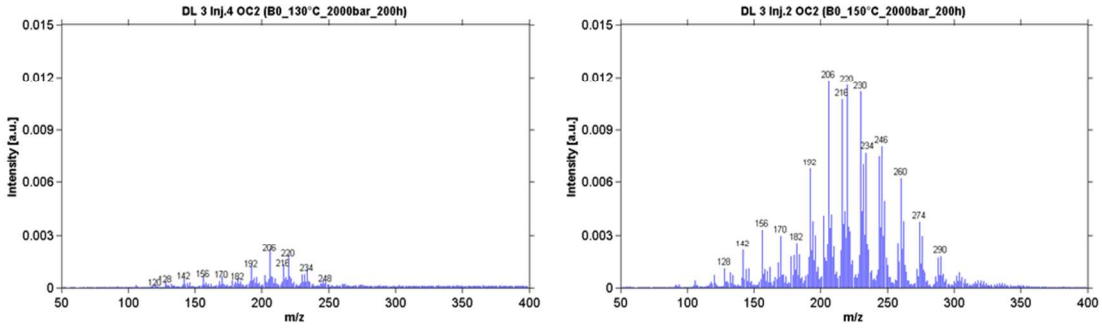

Fig. A.5. Comparison of mass spectra between ring deposits resulted from different temperature influences.

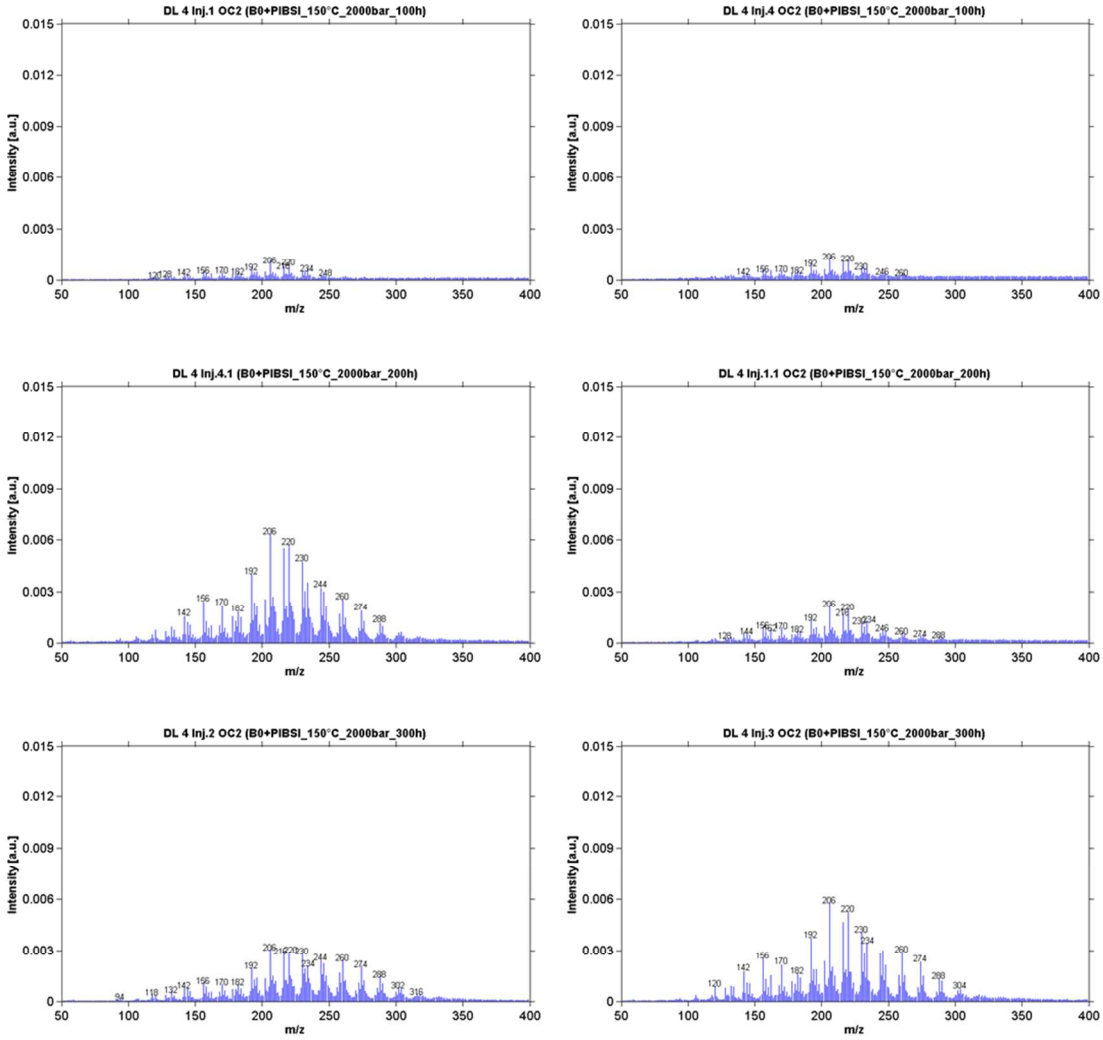

Fig. A.6. Comparison of mass spectra between ring deposits influenced by different run times.

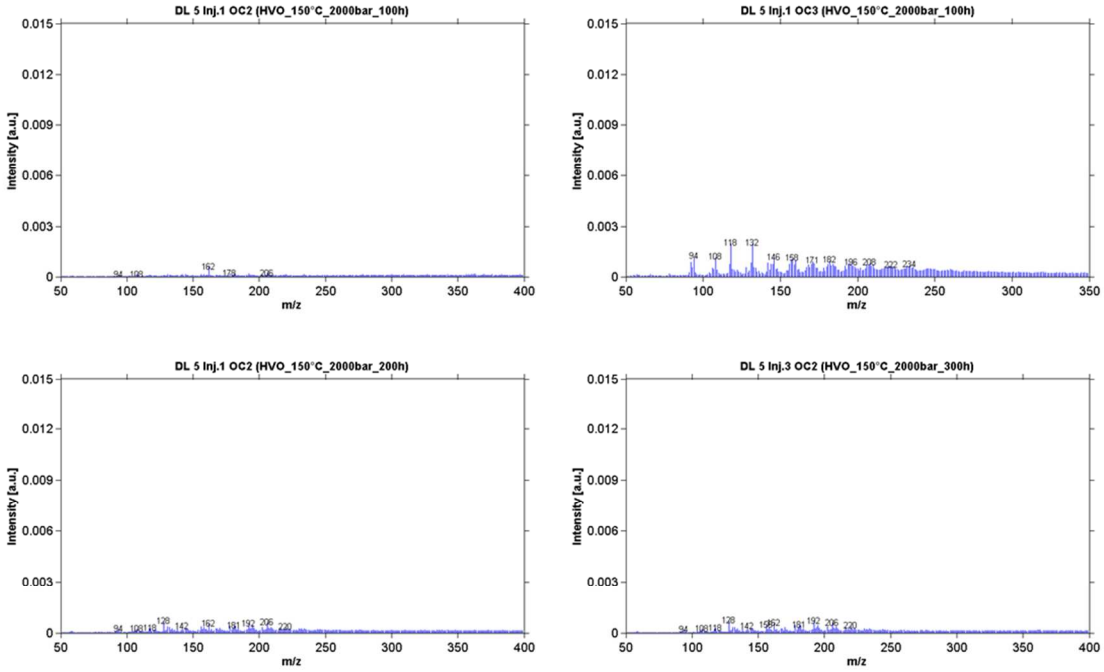

Fig. A.7. Comparison of mass spectra between ring deposits produced by HVO at different run times. The signals are nearly the blank values.

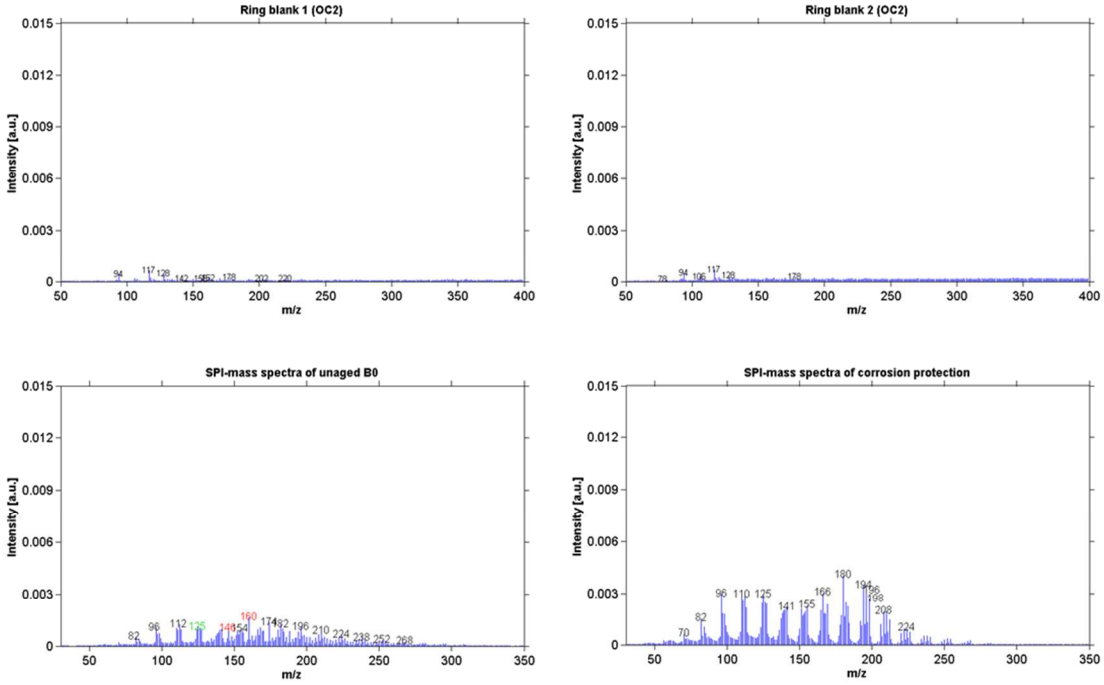

Fig. A.8. Mass spectra of reference samples (blank 1 &2 (REMPI), unaged B0 and industrial corrosion protection (SPI)).

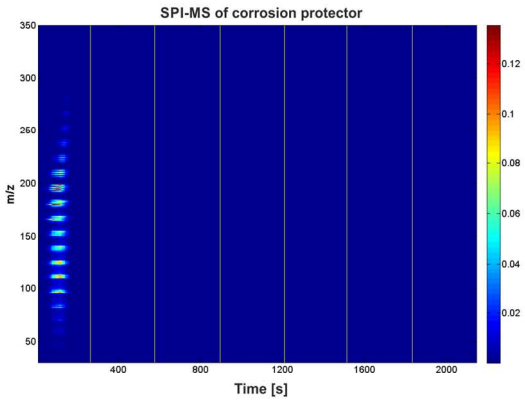

Fig. A.9. Imageplots of SPI measurements of corrosion protector.

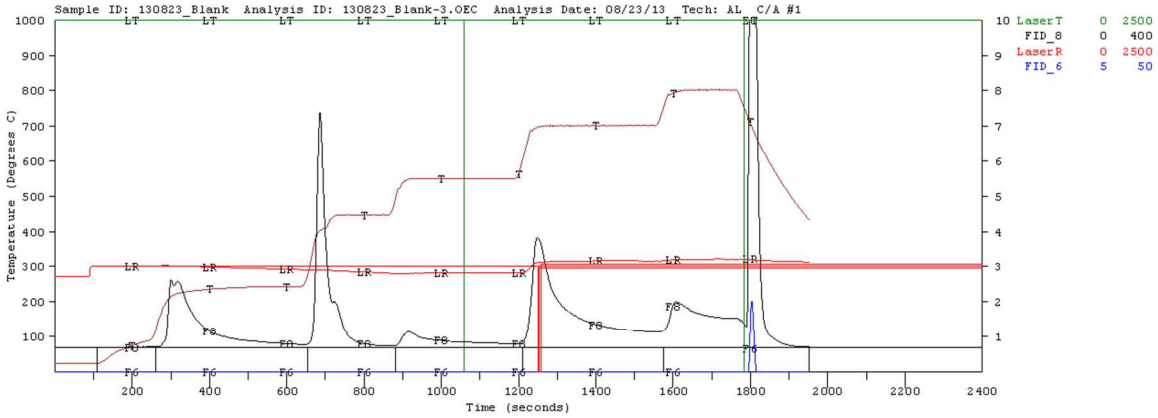

Fig. A.10. FID signal of a blank sample in the Carbon Analyzer.

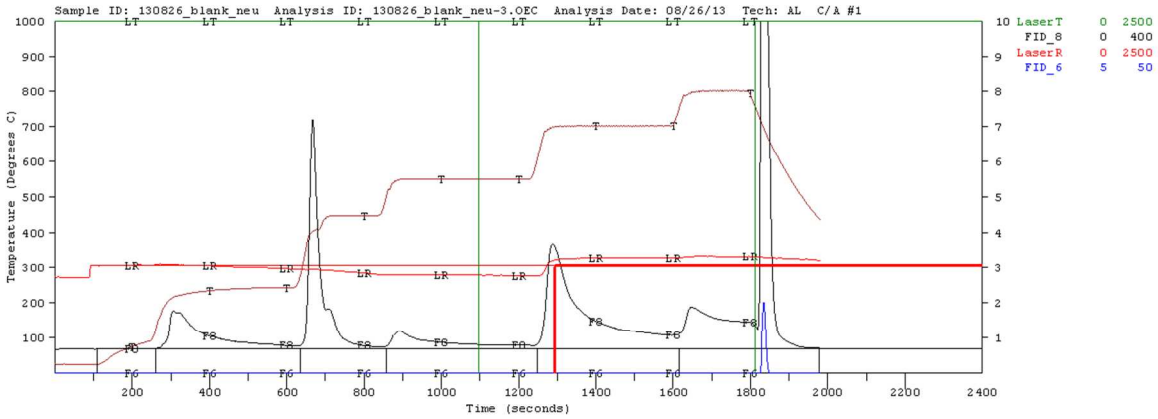

Fig. A.11. A further blank measurement in the Carbon Analyzer. Comparison shows that an unused ring is not completely deposit-free and signal intensity is not equal.

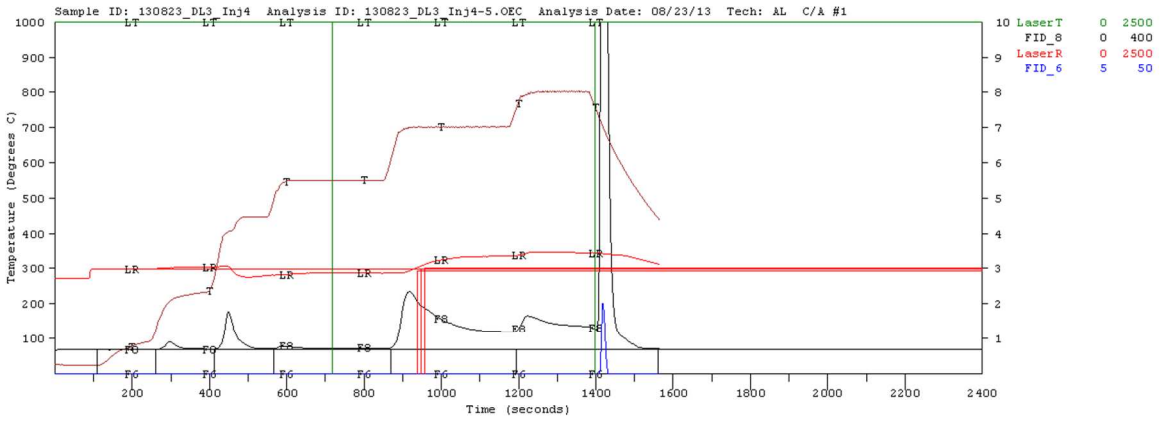

Fig. A.12. FID signal of ring sample B0_130°C_2000bar_200h.

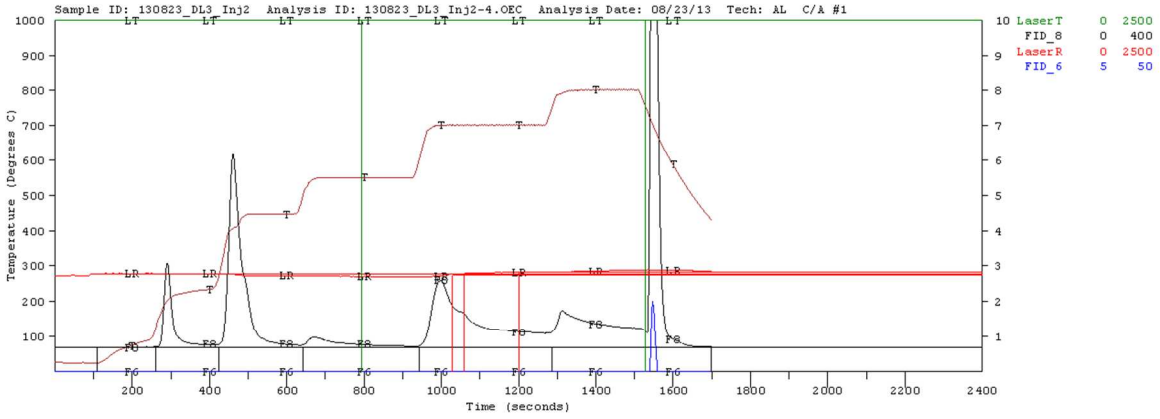

Fig. A.13. FID signal of ring sample B0_150°C_2000bar_200h.

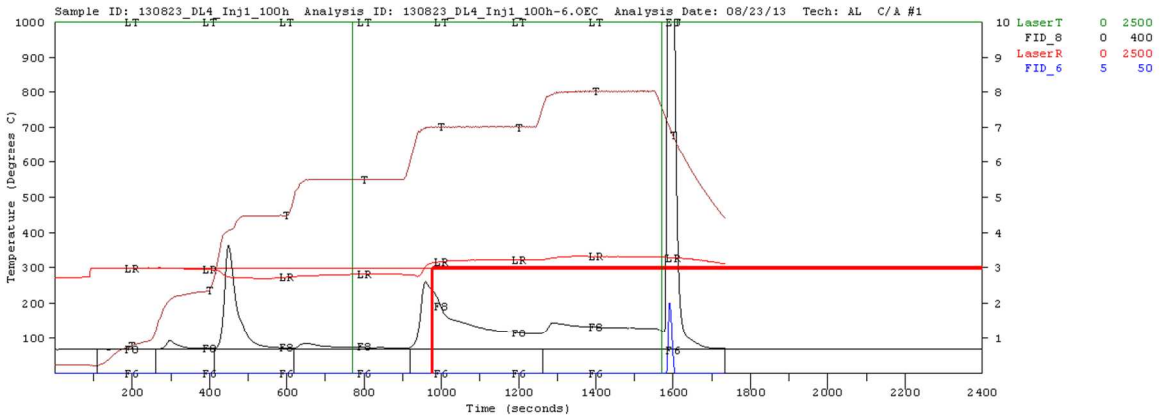

Fig. A.14. FID signal of ring sample B0+PIBSI_150°C_2000bar_100h.

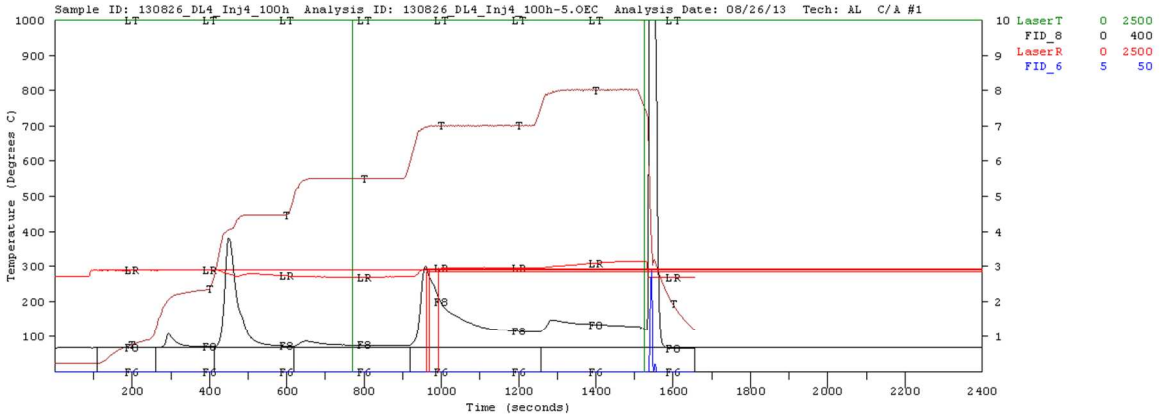

Fig. A.15. FID signal of ring sample B0+PIBSI_150°C_2000bar_100h.

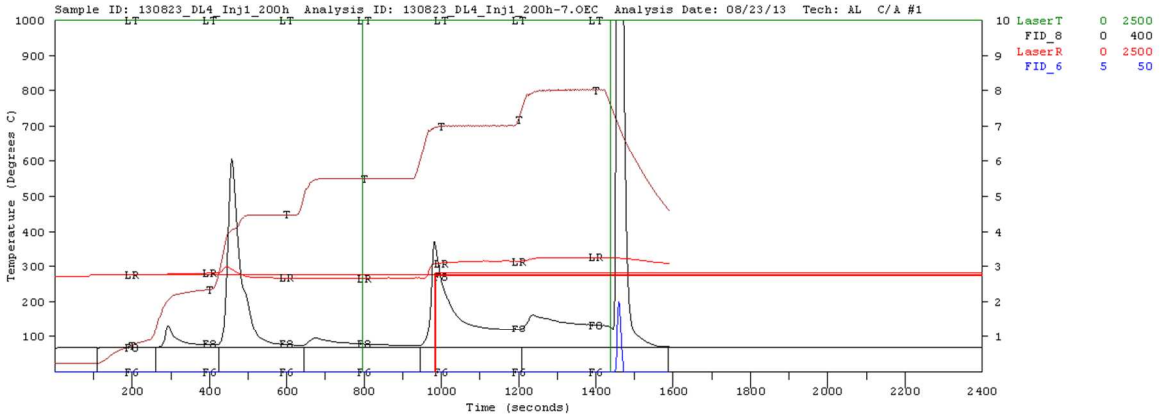

Fig. A.16. FID signal of ring sample B0+PIBSI_150°C_2000bar_200h.

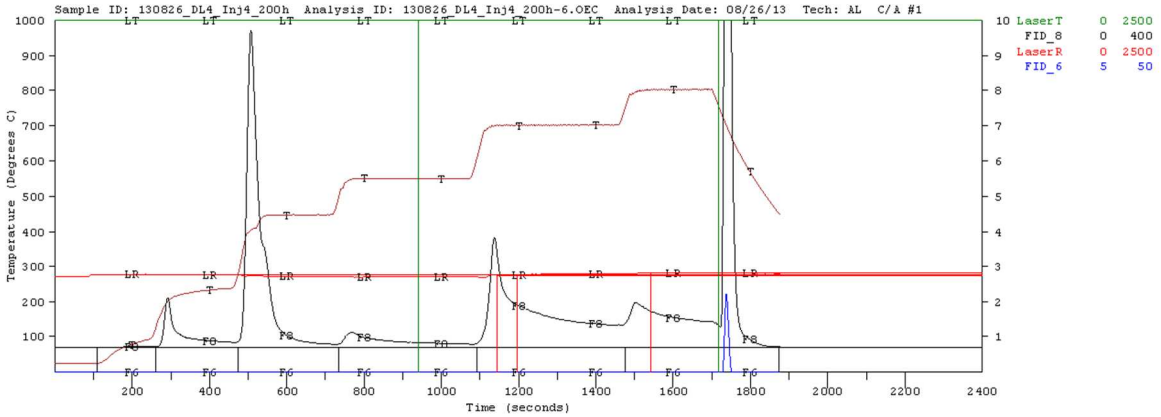

Fig. A.17. FID signal of ring sample B0+PIBSI_150°C_2000bar_200h.

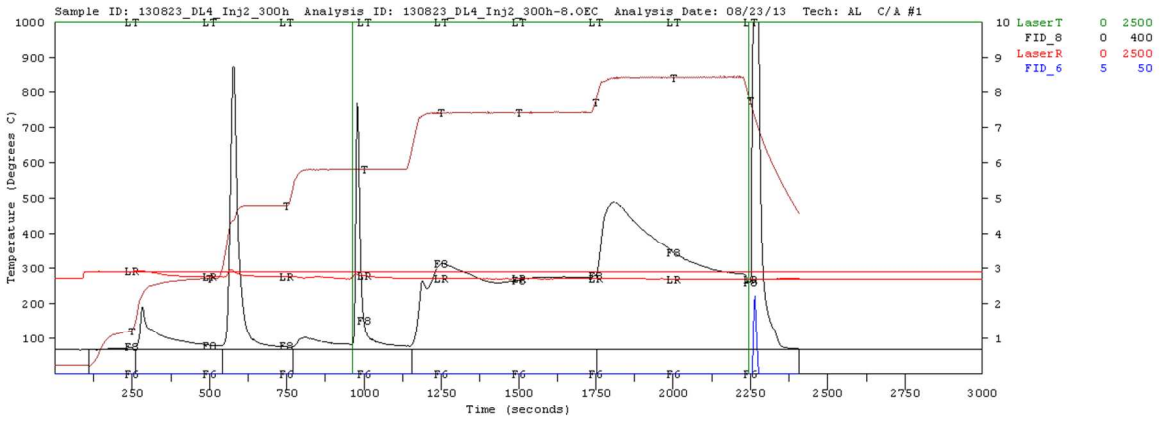

Fig. A.18. FID signal of ring sample B0+PIBSI_150°C_2000bar_300h. Measurement with 2% oxygen after reaching initial point of OC4 fraction.

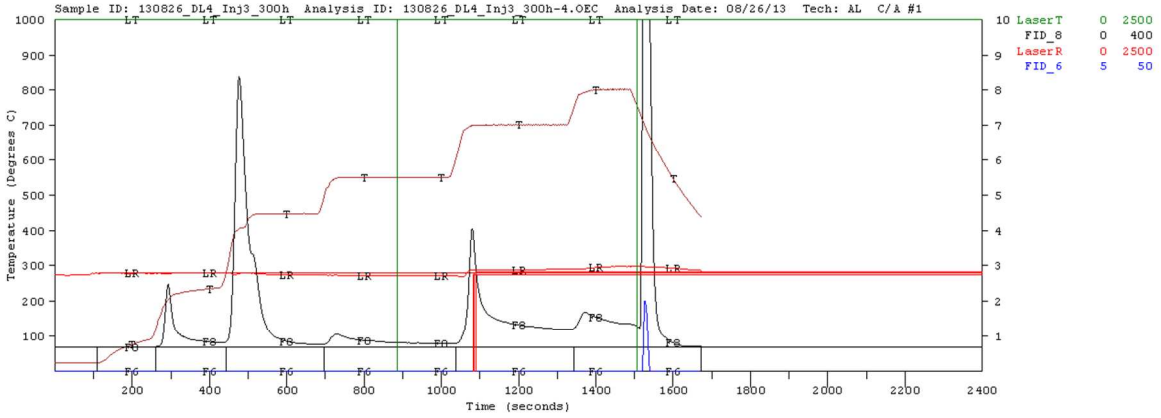

Fig. A.19. FID signal of ring sample B0+PIBSI_150°C_2000bar_300h.

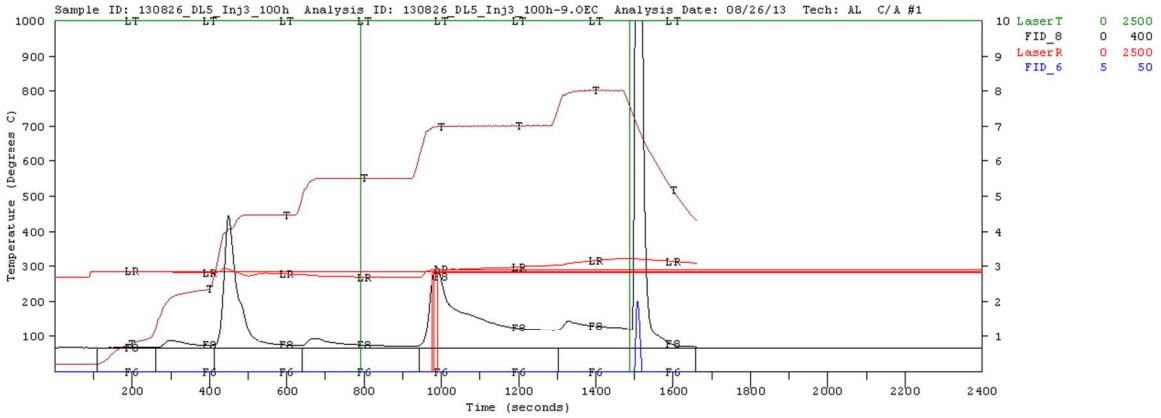

Fig. A.20. FID signal of ring sample HVO_150°C_2000bar_100h.

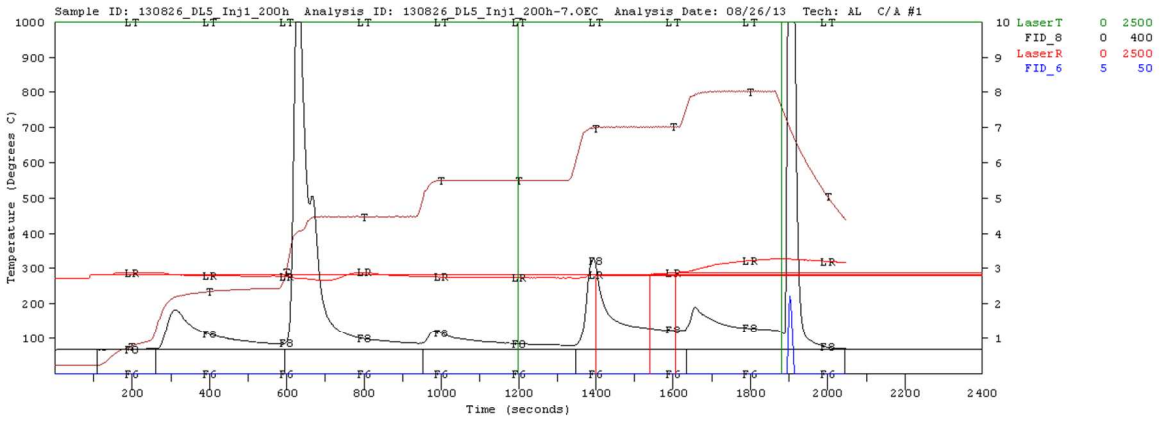

Fig. A.21. FID signal of ring sample HVO_150°C_2000bar_200h.

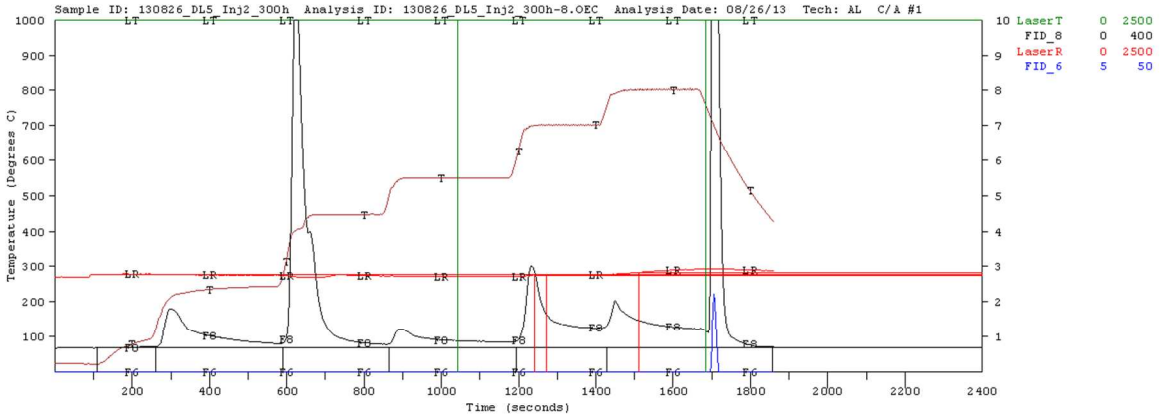

Fig. A.22. FID signal of ring sample HVO_150°C_2000bar_300h.