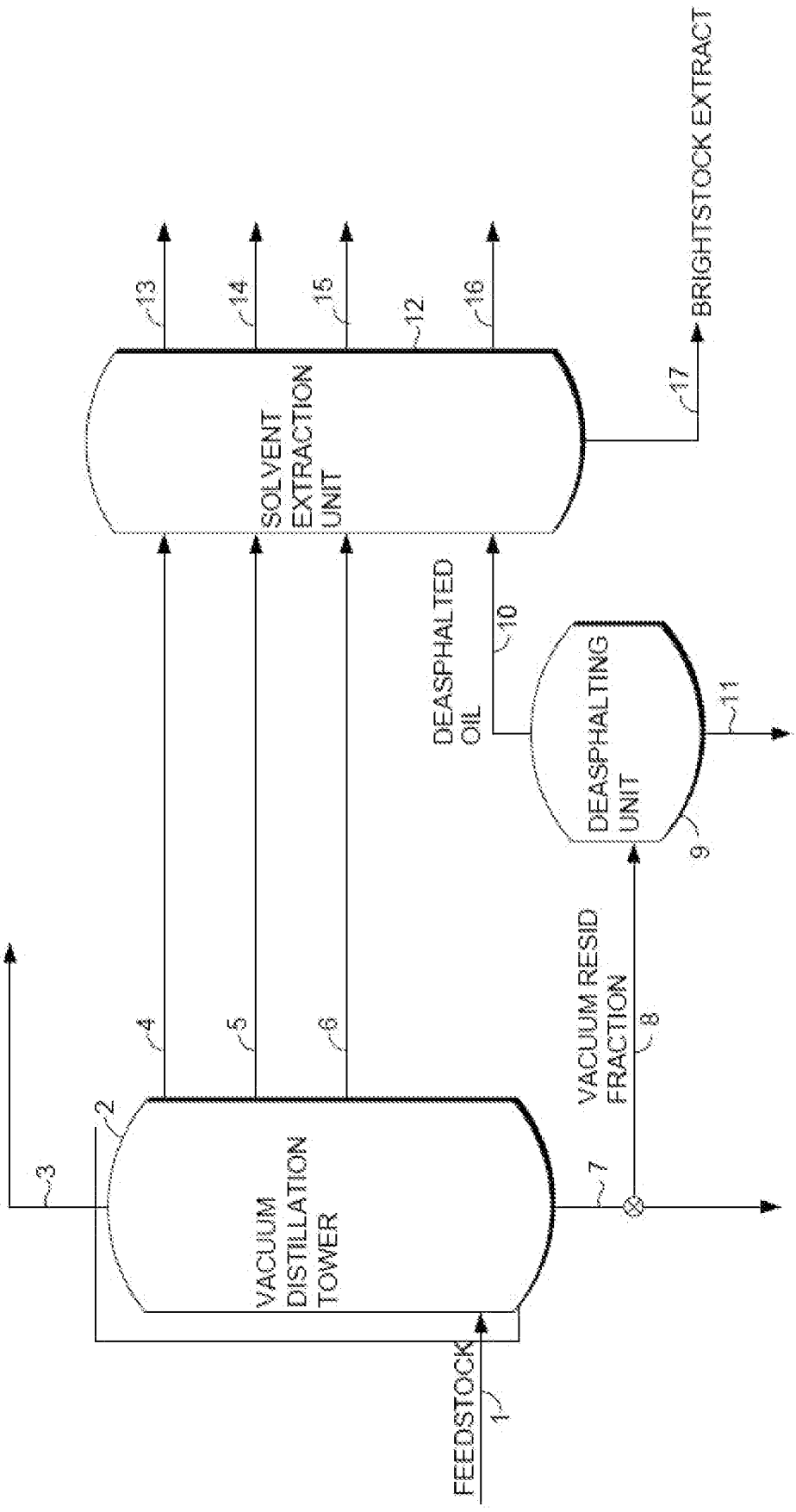

FEEDSTOCK
1
VACUUM DISTILLATION TOWER
2
3
4
5
6
7
VACUUM RESID FRACTION
8
DEASPHALTING UNIT
9
DEASPHALTED OIL
10
11
SOLVENT EXTRACTION UNIT
12
13
14
15
16
17
BRIGHTSTOCK EXTRACT

FIG. 1

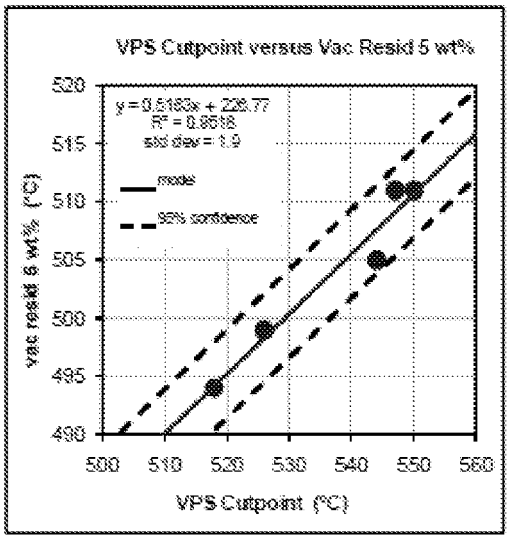

VPS Cutpoint versus Vac Resid 5 wt%
y = 0.5163x + 228.77
R² = 0.8518
std dev = 1.9
model
95% confidence
vac resid 6 wt% (°C)
520
515
510
505
500
495
490
500
510
520
530
540
550
560
VPS Cutpoint (°C)

FIG. 2

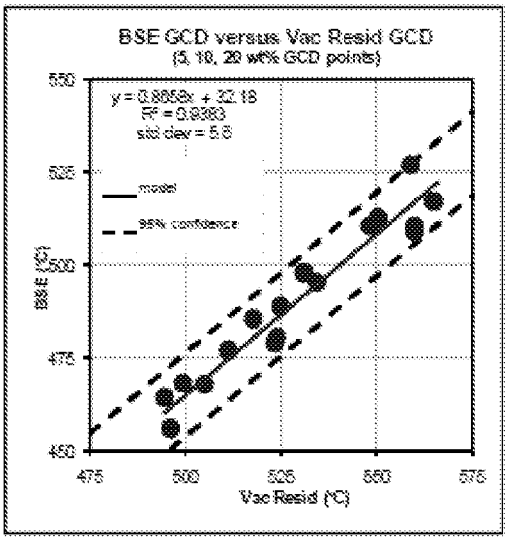

BSE GCD versus Vac Resid GCD
(5, 10, 20 wt% GCD points)
y = 0.8858x + 32.18
R² = 0.9363
std dev = 5.6
model
95% confidence
BSE (°C)
550
525
500
475
450
475
500
525
550
575
Vac Resid (°C)

FIG. 3

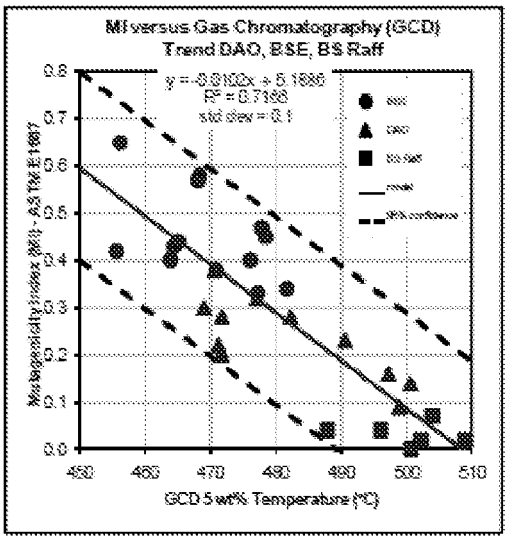

MI versus Gas Chromatography (GCD)
Trend DAQ, BSE, BS Raff
y = -0.0102x + 5.1686
R² = 0.7168
std dev = 0.1
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
450
460
470
480
490
500
510
GCD 5 wt% Temperature (°C)

FIG. 4