

Supporting Information

Effect of HBr formation on mercury oxidation via CaBr₂ addition to coal during combustion

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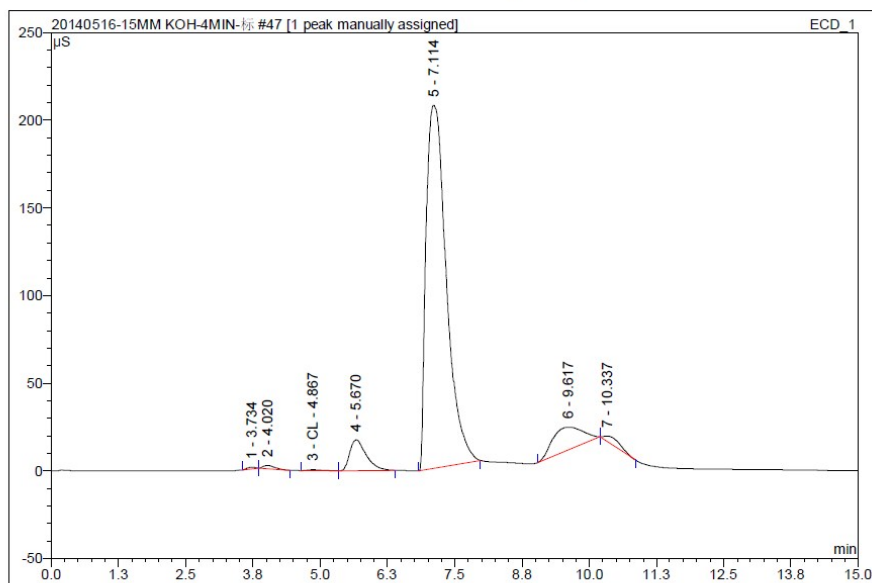
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Operator:Lenovo Timebase:ICS-1100 Sequence:20140516-15MM KOH-4MIN-标

Integration

Sample Name:	272	Injection Volume:	25.0
Sample Type:	unknown	Channel:	ECD_1
Control Program:	15mM KOH-4Min-15无梯度	Instrument:	ICS-1100
Quantif. Method:	TEST	Column:	AS19
Recording Time:	#####	Dilution Factor:	50.0000
Run Time (min):	15.00	Sample Weight:	0.1137



No.	Ret.Time min	Peak Name	Height µS	Area µS*s	Rel.Area %	Amount mg/kg	S/N	Plates(EP)
1	3.73	n.a.	0.9435	9.69	0.15	n.a.	4.3	2657
2	4.02	n.a.	1.8623	27.04	0.42	n.a.	8.4	1712
3	4.87	CL	0.5935	9.83	0.15	151.34	2.7	2002
4	5.67	n.a.	17.5660	373.51	5.82	n.a.	79.2	1704
5	7.11	n.a.	207.1474	5396.35	84.13	n.a.	485.3	1729
6	9.62	n.a.	12.9273	511.43	7.97	n.a.	5.9	1201
7	10.34	n.a.	3.1566	86.69	1.35	n.a.	1.4	3807
Total:			244.197	6414.531	100.00	151.335		

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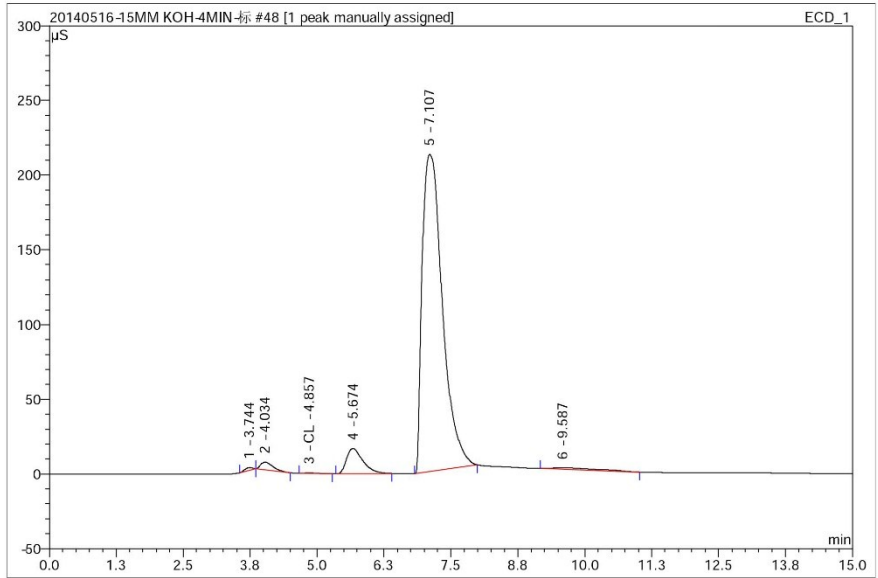
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Fig S1 Test report of anthracite

Operator:Lenovo Timebase:ICS-1100 Sequence:20140516-15MM KOH-4MIN-标

Integration			
Sample Name:	129	Injection Volume:	25.0
Sample Type:	unknown	Channel:	ECD_1
Control Program:	15mM KOH-4Min-15无梯度	Instrument:	ICS-1100
Quantif. Method:	TEST	Column:	AS19
Recording Time:	#####	Dilution Factor:	50.0000
Run Time (min):	15.00	Sample Weight:	0.0852

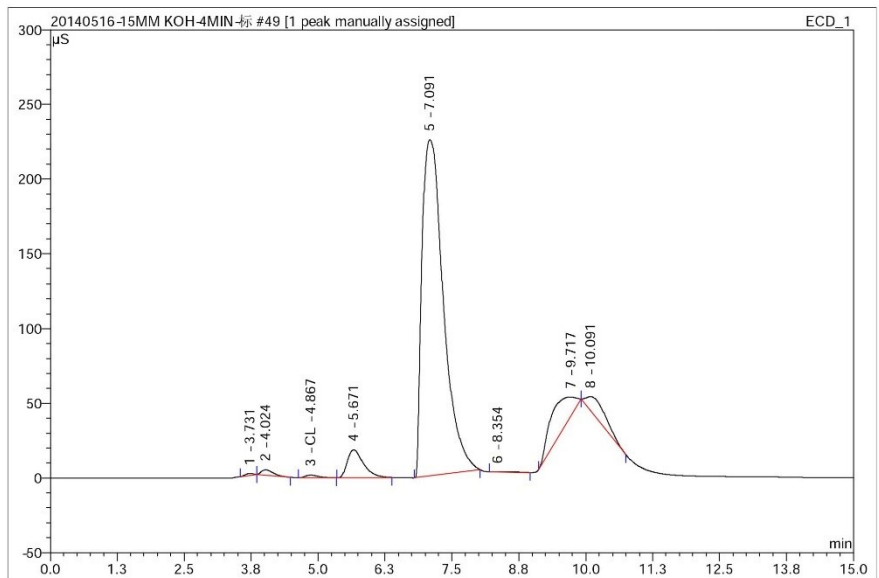


No.	Ret.Time min	Peak Name	Height µS	Area µS*s	Rel.Area %	Amount mg/kg	S/N	Plates(EP)
1	3.74	n.a.	1.7910	19.20	0.31	n.a.	5.8	2550
2	4.03	n.a.	5.1436	80.96	1.33	n.a.	16.6	1482
3	4.86	CL	0.4556	6.96	0.11	143.08	1.5	2247
4	5.67	n.a.	16.8878	358.53	5.88	n.a.	54.4	1709
5	7.11	n.a.	212.2050	5562.01	91.19	n.a.	796.7	1706
6	9.59	n.a.	1.0226	71.43	1.17	n.a.	10.4	313
Total:			237.506	6099.083	100.00	143.080		

Fig S2 Test report of Lignite

Operator:Lenovo Timebase:ICS-1100 Sequence:20140516-15MM KOH-4MIN-标

Integration			
Sample Name:	334	Injection Volume:	25.0
Sample Type:	unknown	Channel:	ECD_1
Control Program:	15mM KOH-4Min-15无梯度	Instrument:	ICS-1100
Quantif. Method:	TEST	Column:	AS19
Recording Time:	#####	Dilution Factor:	50.0000
Run Time (min):	15.00	Sample Weight:	0.1100



No.	Ret.Time min	Peak Name	Height µS	Area µS*s	Rel.Area %	Amount mg/kg	S/N	Plates(EP)
1	3.73	n.a.	1.2734	12.98	0.17	n.a.	3.6	2705
2	4.02	n.a.	3.6314	55.35	0.72	n.a.	10.4	1555
3	4.87	CL	1.7688	29.29	0.38	466.31	5.0	2013
4	5.67	n.a.	18.6076	390.98	5.07	n.a.	53.1	1743
5	7.09	n.a.	224.9222	6254.64	81.08	n.a.	36.2	1526
6	8.35	n.a.	0.1474	6.48	0.08	n.a.	0.0	1141
7	9.72	n.a.	13.2629	663.89	8.61	n.a.	2.1	1438
8	10.09	n.a.	9.3751	300.86	3.90	n.a.	1.5	2464
Total:			272.989	7714.474	100.00	466.306		

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Fig S3 Test report of bituminous coal

Table S1 Results of total mercury in coalsamples

coal samples	mercury content ($\mu\text{g}/\text{kg}$)			average ($\mu\text{g}/\text{kg}$)
	1	2	3	
lignite	198	203	199	200 \pm 3
anthracite	95	103	111	103 \pm 8
bituminous coal	124	126	120	124 \pm 3

Table S2 The repeated experiment results of each CaBr_2 addition

CaBr_2 addition (ppm)		0	50	100	200	300	400
mercury	1	187	168	155	116	118	100
content	2	179	152	140	103	106	113
($\mu\text{g}/\text{kg}$)	3	184	165	154	108	111	117
average ($\mu\text{g}/\text{kg}$)		183 \pm 4	162 \pm 9	150 \pm 8	109 \pm 6	112 \pm 6	110 \pm 8