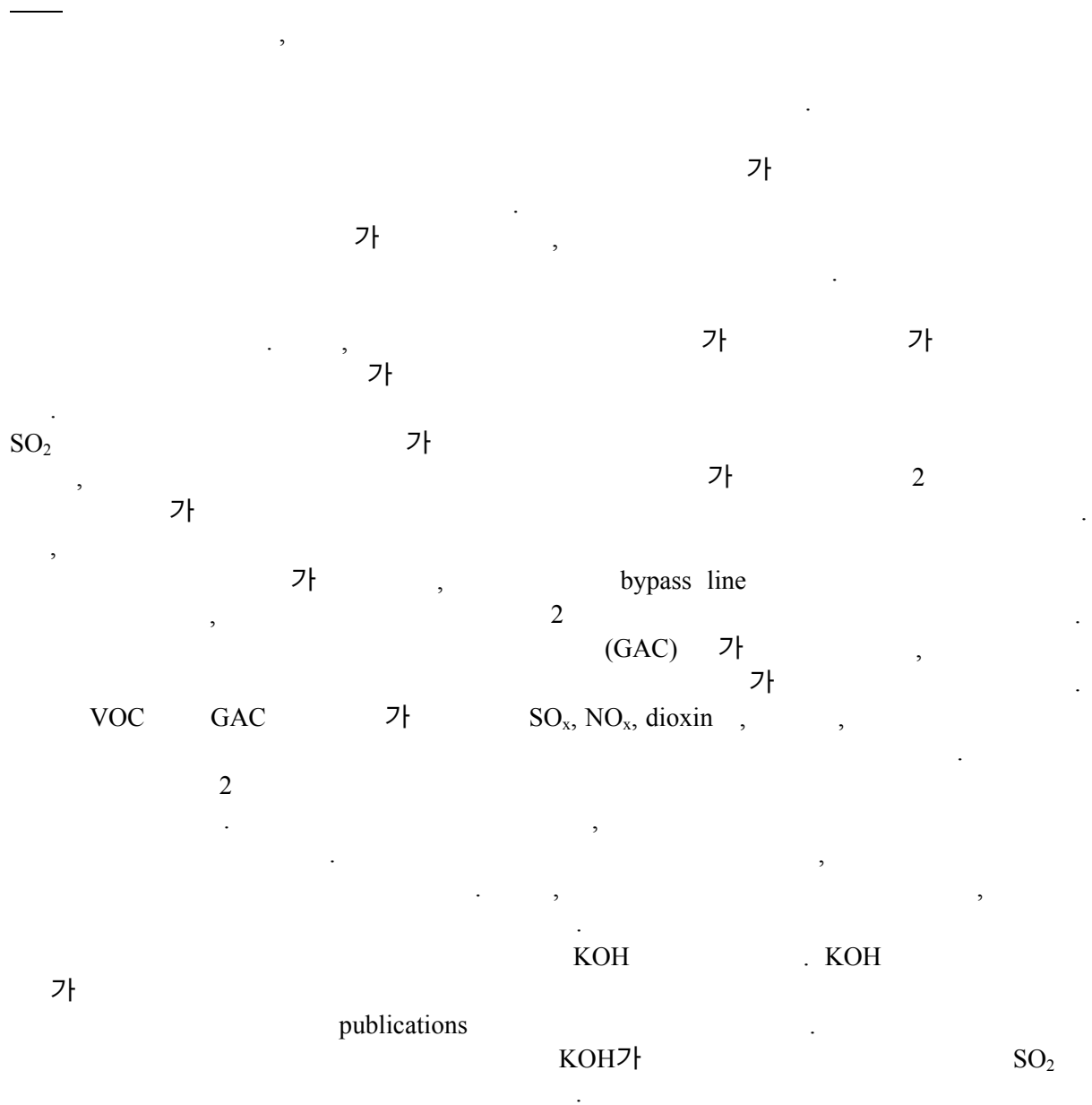


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Selective Adsorption of Sulfur Dioxides and Dioxins on Alkaline Activated Carbon

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KOH (Junsei Chemical Co.) (GAC, Dongyang Carbon Co.)
 4 N₂, 110, 8/16 mesh, 140
 KOH, 130
 K 가

Table 1. Physical properties of IAC

Property	IAC [GAC, loss (%)]
bulk density, kg/m ³	570
BET surface area, m ² /g	719 [1160, 38]
mesopore area, m ² /g	15 [42, 64]
micropore volume, cm ³ /kg	232 [347, 33]
average pore diameter,	11.5

316, 10.9mm, 400mm
 (channeling)
 steel mesh
 (electric furnace)
 K- (Omega Engineering Inc.)
 (in-line mixer)
 He 200 30 purging line SO₂ O₂
 (Figure 1).

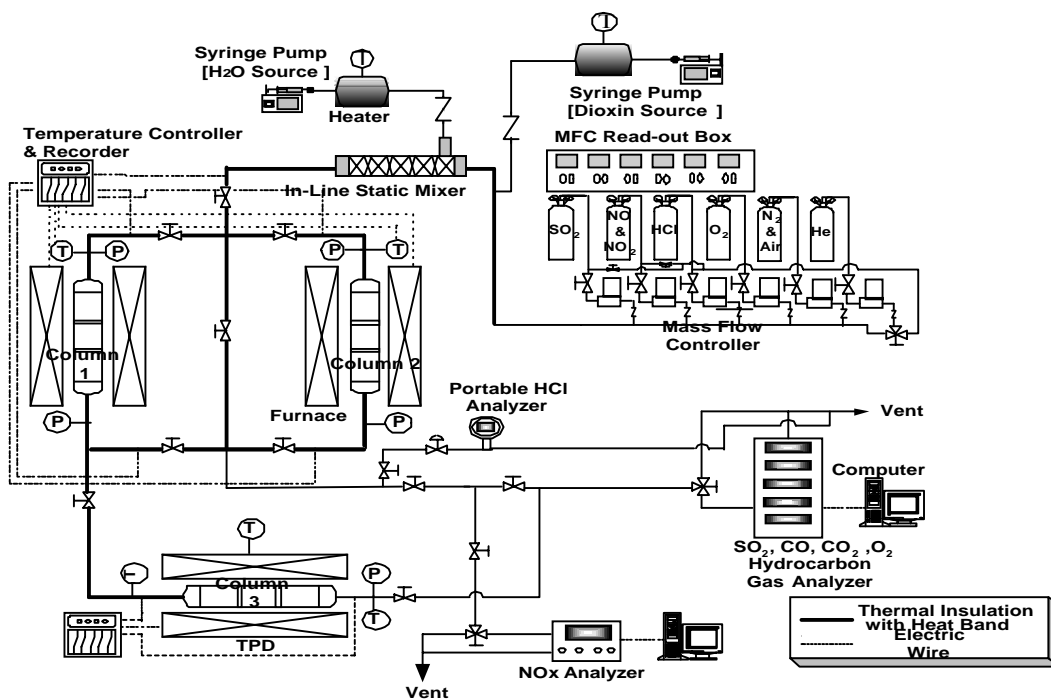


Figure 1. Schematic diagram of the experimental system.

Bench 1.8m 734.6 m²/h, 6.5 cm/sec
 electrostatic precipitator (ESP),
 bagfilter
 120 가
 150 가 PCDD/PCDF 가
 10⁻²ng-TEQ/Nm³ 가 GC/MS
 (mass spectrometer) SP2331 60m*0.32mm ID *0.2 m 가
 Shimazu 14
 KOH coconut shell 가 가
 Table 1 IAC
 GAC KOH surface area
 GAC SO₂ KOH 가
 SO₂ Table 2
 163ppm SO₂ 가 IAC 가 peak
 m/z IAC SO₂
 adsorbed IAC sputtering SiO₂ 20Å IAC SO₂
 Figure 2 10 가 PCDFs 7 가 PCDDs
 86.7%~100%가 IAC

Table 2. Integrated Values of ToF-SIMS Peak Intensity (I.P.I.) of Main Ion Species before and after SO₂ adsorption on IAC.

Main peak	m/z	Non adsorbed IAC	SO ₂ adsorbed IAC	External Surface (times)	Non adsorbed IAC	SO ₂ adsorbed IAC	After 20 Å sputtering (times)
OH ⁻	17.0027	293703	97692	3.01 ↓	187763	95270	1.97 ↓
KO ⁻	55.9588	532	297	1.79 ↓	1330	1143	1.16 ↓
SO ⁻	47.9969	15022	27595	1.84 ↑	16523	82222	4.98 ↑
SO ₂ ⁻	63.9618	22179	47342	2.13 ↑	14871	87709	5.90 ↑
SO ₃ ⁻	79.9567	24762	80545	3.25 ↑	8457	63815	7.55 ↑
SO ₄ ⁻	95.9516	747	34545	46.24 ↑	1755	16721	9.53 ↑
C ⁻	12.0000	26578	9856	2.70 ↓	41565	8140	5.11 ↓
CH ⁻	13.0078	94495	10242	9.23 ↓	34184	5452	6.27 ↓

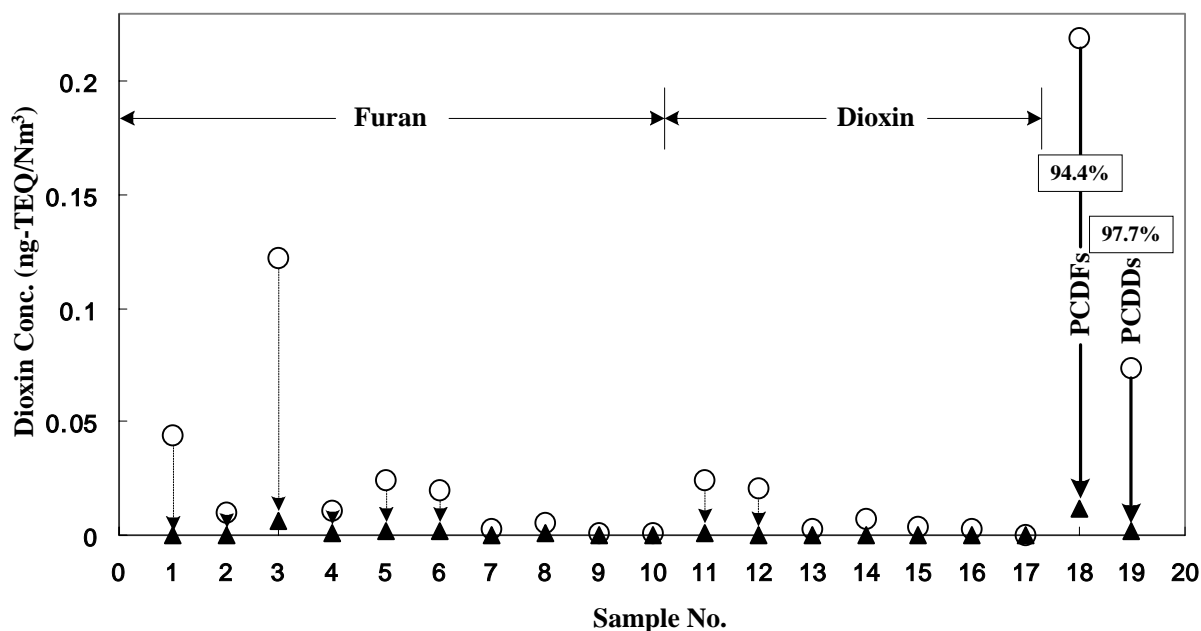


Figure 2. Exhausted concentration and Removal efficiency of PCDD/PCDF

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