Supplementary materials

Article

Activated Carbons for Removing Ammonia from Piggery Vent Air: A Promising Tool for Mitigating the Environmental Impact of Large-Scale Pig Breeding

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Table S1. Composition of the gas stream (selected compounds) at the furnace (F) inlet calculated during activation process simulation.

	W800H_2O	PO800H_2O	W750CO_2	PO750CO_2	W900CO_2	PO900CO_2
H_2 [vol. %]	48.9	46.6	3.2	21.1	3.1	19.1
CH_4 [vol. %]	6.9e-3	7.4e-4	7.0e-5	1.2e-3	5.8e-6	2.6e-5
CO [vol. %]	41.9	23.3	74.4	48.7	89.3	51.1
CO_2 [vol. %]	4.0	10.6	21.6	22.6	7.2	20.3
H_2O [vol. %]	4.3	19.3	0.7	7.4	0.3	9.5

Table S2. Porous texture of activated carbons prepared by KOH activation (symbol pattern: $V_{\text{pores width}}$, e.g., $V_{<0.4}$: volume of pores of width < 0.4 nm).

Sample	S_{BET} [m^2/g]	$V_{<0.4}$ [cm^3/g]	$V_{0.4\text{-}2}$ [cm^3/g]	$V_{2\text{-}3}$ [cm^3/g]	$V_{3\text{-}5}$ [cm^3/g]	$V_{5\text{-}10}$ [cm^3/g]	$V_{10\text{-}50}$ [cm^3/g]	V_{tot} [cm^3/g]
KC700KOH1	547	0.004	0.220	0.021	0.009	0.007	0.005	0.453
KC700KOH2	1011	0.000	0.411	0.029	0.011	0.013	0.005	0.469
KC700KOH3	1282	0.000	0.517	0.043	0.020	0.019	0.008	0.607
KC700KOH4	1408	0.000	0.559	0.057	0.028	0.018	0.010	0.672
KC800KOH1	669	0.000	0.284	0.011	0.008	0.005	0.002	0.310
KC800KOH2	1129	0.000	0.470	0.029	0.012	0.011	0.008	0.530
KC800KOH3	1365	0.000	0.561	0.040	0.021	0.012	0.011	0.645
KC800KOH4	1476	0.000	0.610	0.055	0.023	0.016	0.014	0.718
KC900KOH1	692	0.000	0.288	0.016	0.007	0.005	0.002	0.318
KC900KOH2	1202	0.000	0.485	0.045	0.014	0.009	0.006	0.559
KC900KOH3	1414	0.000	0.570	0.060	0.018	0.015	0.009	0.672
KC900KOH4	1607	0.000	0.650	0.072	0.026	0.020	0.010	0.778
W700KOH1	351	0.031	0.150	0.012	0.005	0.003	0.003	0.204
W700KOH2	783	0.000	0.325	0.025	0.017	0.002	0.009	0.378
W700KOH3	1098	0.000	0.360	0.131	0.020	0.010	0.022	0.543
W700KOH4	1305	0.000	0.525	0.101	0.027	0.015	0.026	0.694
W800KOH1	451	0.013	0.187	0.021	0.005	0.005	0.005	0.236
W800KOH2	907	0.000	0.369	0.045	0.013	0.012	0.011	0.450
W800KOH3	1210	0.000	0.487	0.068	0.023	0.014	0.019	0.611
W800KOH4	1479	0.000	0.583	0.147	0.037	0.028	0.034	0.829
W900KOH1	540	0.033	0.212	0.034	0.008	0.007	0.012	0.306
W900KOH2	837	0.000	0.328	0.055	0.027	0.018	0.026	0.454
W900KOH3	1020	0.000	0.397	0.081	0.033	0.026	0.028	0.565
W900KOH4	913	0.000	0.352	0.095	0.043	0.037	0.036	0.563
PO700KOH1	728	0.085	0.294	0.011	0.007	0.004	0.002	0.403

PO700KOH2	1445	0.000	0.580	0.014	0.009	0.011	0.008	0.622
PO700KOH3	1982	0.000	0.776	0.029	0.017	0.016	0.008	0.846
PO700KOH4	1739	0.000	0.704	0.040	0.024	0.020	0.010	0.798
PO600KOH4	1768	0.000	0.702	0.052	0.038	0.027	0.011	0.830
PO800KOH4	2329	0.000	0.931	0.059	0.023	0.018	0.010	1.041
PO900KOH4	2356	0.000	0.936	0.158	0.051	0.028	0.017	1.190