Supporting Materials

Table S1 Inorganic salt medium formulation.

Reagent	Concentration (g/L)
NH_4Cl	0.60
$K_2HPO_4 \cdot 2H_2O$	0.62
KH_2PO_4	0.70
$NaNO_3$	1.70
Phenanthrene	0.20
$CaCl_2$	0.10
$MgCl_2$	0.10
$Na_2S \cdot 9H_2O$	0.005
$NaHCO_3$	0.20
Trace elements	0.0002
Vitamins	0.0002

Table S2 Content of PAHs in contaminated soil.

PAHs	Benzene ring number	Content (mg/kg soil)
Naphthalene	2	35.9 ± 3.5
Acenaphthylene	3	140.9 ± 5.2
Acenaphthene	3	15.9 ± 1.1
Fluorene	3	0
Phenanthrene	3	1.7 ± 0.2
Anthracene	3	2.9 ± 0.5
Fluoranthene	4	58.3 ± 3.1
Pyrene	4	55.0 ± 2.3
Benzo(a)Anthracene	4	32.3 ± 1.1
Chrysene	4	0
Benzo(b)Fluoranthene	5	40.9 ± 3.8
Benzo(k)Fluoranthene	5	35.8 ± 2.2
Benzo(a)Pyrene	5	35.1 ± 2.6
Dibenz(a,h)Anthracene	5	70.5 ± 3.5
Benzo(g,h,i)Perylene	6	0
Indeno(1,2,3-cd)Pyrene	6	43.7 ± 2.1

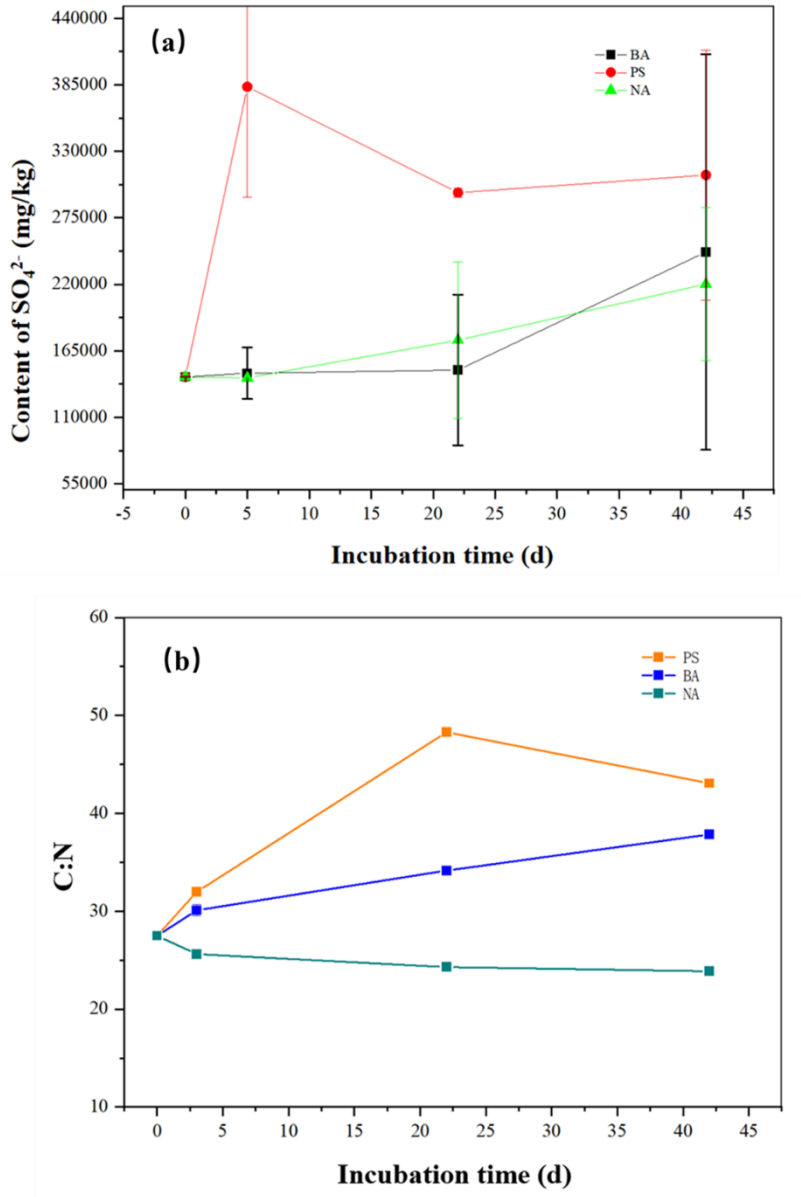

Fig. S1 (a) Content of SO_4^{2-} and (b) C:N in BA, PS and NA system.

Table S3 Content of NO_3^- in BA, PS and NA system (mg/kg soil).

Sample	Day 0	Day 3	Day 5	Day 7	Day 22	Day 29	Day 42
BA	1129.9 ± 3.5	374.3 ± 1.7	12.0 ± 0.9	0	0	0	0
PS	0	0	0	0	0	0	0
NA	0	0	0	0	0	0	0

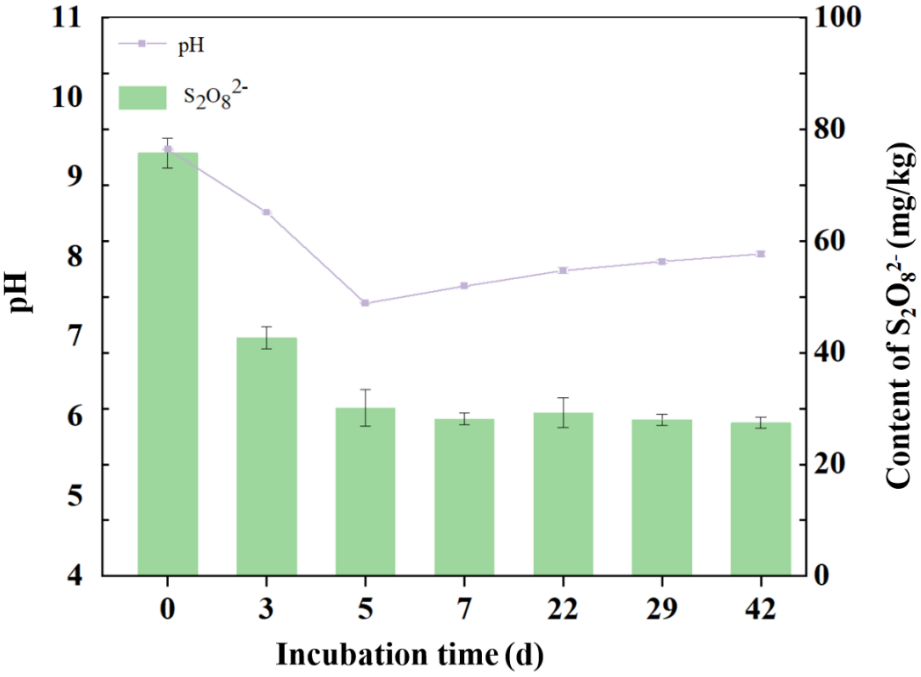

Fig. S2 Soil pH and content of $S_2O_8^{2-}$ in PS system.

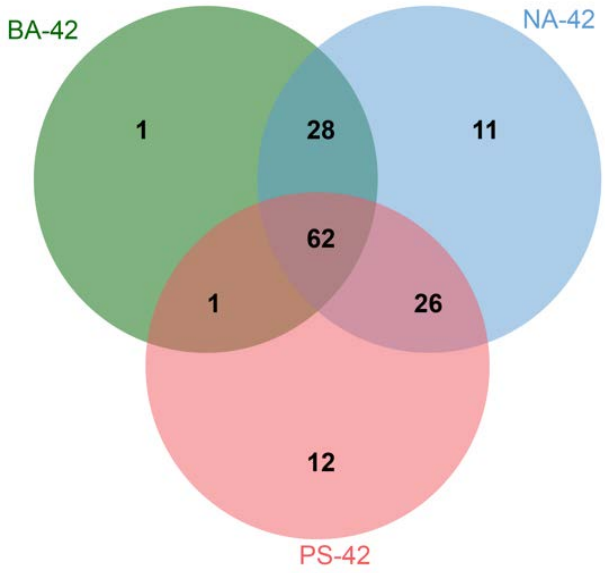

Fig. S3 Microbial count in BA, PS and NA system on Day 42.