

ARTICLE

Polyelectrolyte Stabilizer Cooperating with Sodium Silicate to Stabilize Engineering Surplus Soils to Establish Dual-crosslinking Flowable Stabilized Soil

Received 00th January 20xx,
Accepted 00th January 20xx

DOI: 10.1039/x0xx00000x

Haiyang Zhang,^a Dengliang He,^{*a} Shishan Xue,^{*a} Shuxin Liu,^a Mengyong Ran,^b and Yi Liu^b

Table S1 Experimental parameters of anionic polyelectrolyte stabilizers

Labels	Deionized water (mL)	Isopropanol (mL)	APS (g)	AA (g)	AM (g)	Temp. (°C)
P(AA-co-AM)	145	12	3.5	30	14.80	94
L-PAA	145	10	3.8	45	0.00	94
H-PAA	145	12	5	45	0.00	94

Table S2 The texture property of soil mass stabilized by different anionic polyelectrolytes

Sample	Specific surface area (m ² /g)	Single-point total pore volume (cc/g)	Average pore radius (Å)	Mode pore diameter (Å)
99wt%Tap water	37.628	0.106591	56.7	18.2
5wt%P(AA-co-AM)	24.367	0.116506	65.6	17.6
5wt%L-PAA	33.045	0.076235	46.1	18.8
5wt%H-PAA	26.379	0.078482	59.5	18.7

^a Chemistry and Material Engineering School, Mianyang Teachers' College, Mianxing West Road No.166, Mianyang City, Sichuan Province, CN, 621000; 449011902@qq.com; xueshishancarol@163.com.

^b Chengdu Yongtuo Building Materials Co., Ltd, Wen'an Community, Hong'an Town, Longquanyi District, Chengdu City, Sichuan Province, CN, 610108.

† Footnotes relating to the title and/or authors should appear here.

Supplementary Information available: [details of any supplementary information available should be included here]. See DOI: 10.1039/x0xx00000x

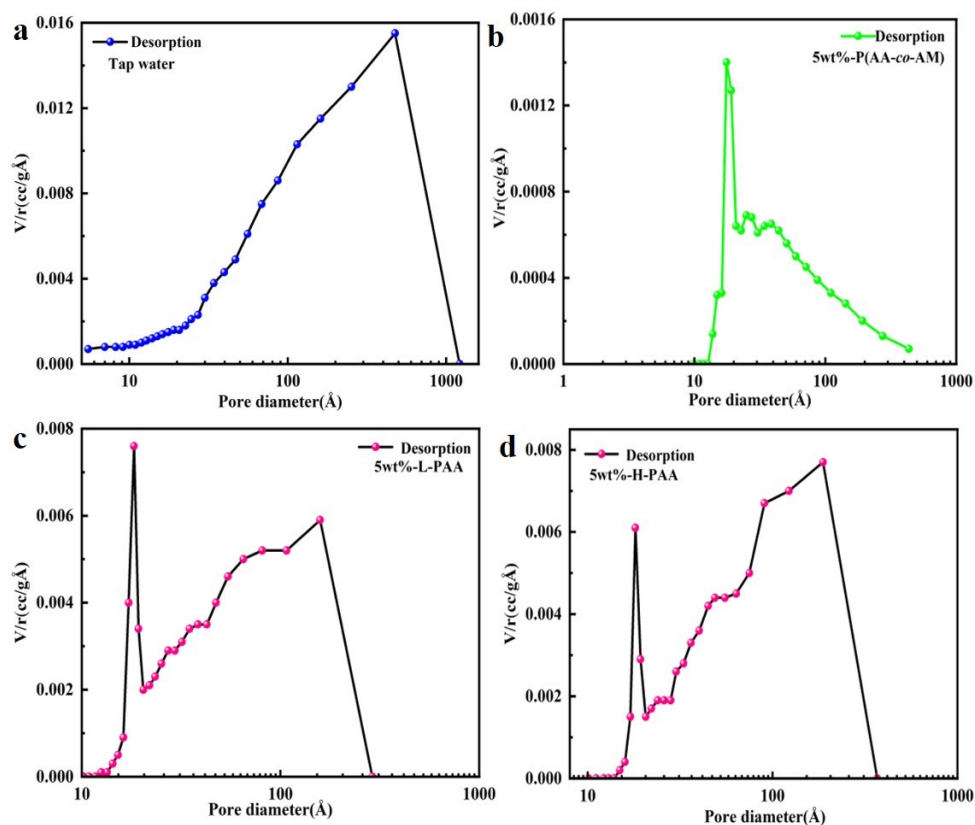


Fig. S1 The BJH desorption pore volume plot of soil mass stabilized by (a) tap water, (b) 5wt%-P(AA-co-AM), (c) 5wt%-L-PAA, (d) 5wt%-H-PAA.

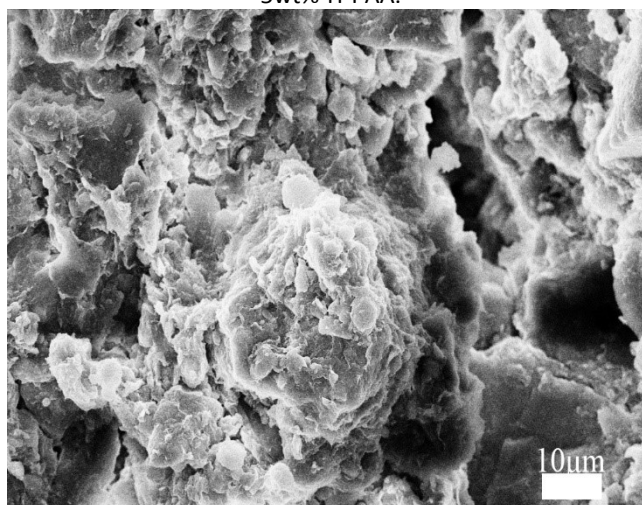


Fig. S2 SEM image of the 1wt% SS-stabilized soil mass.

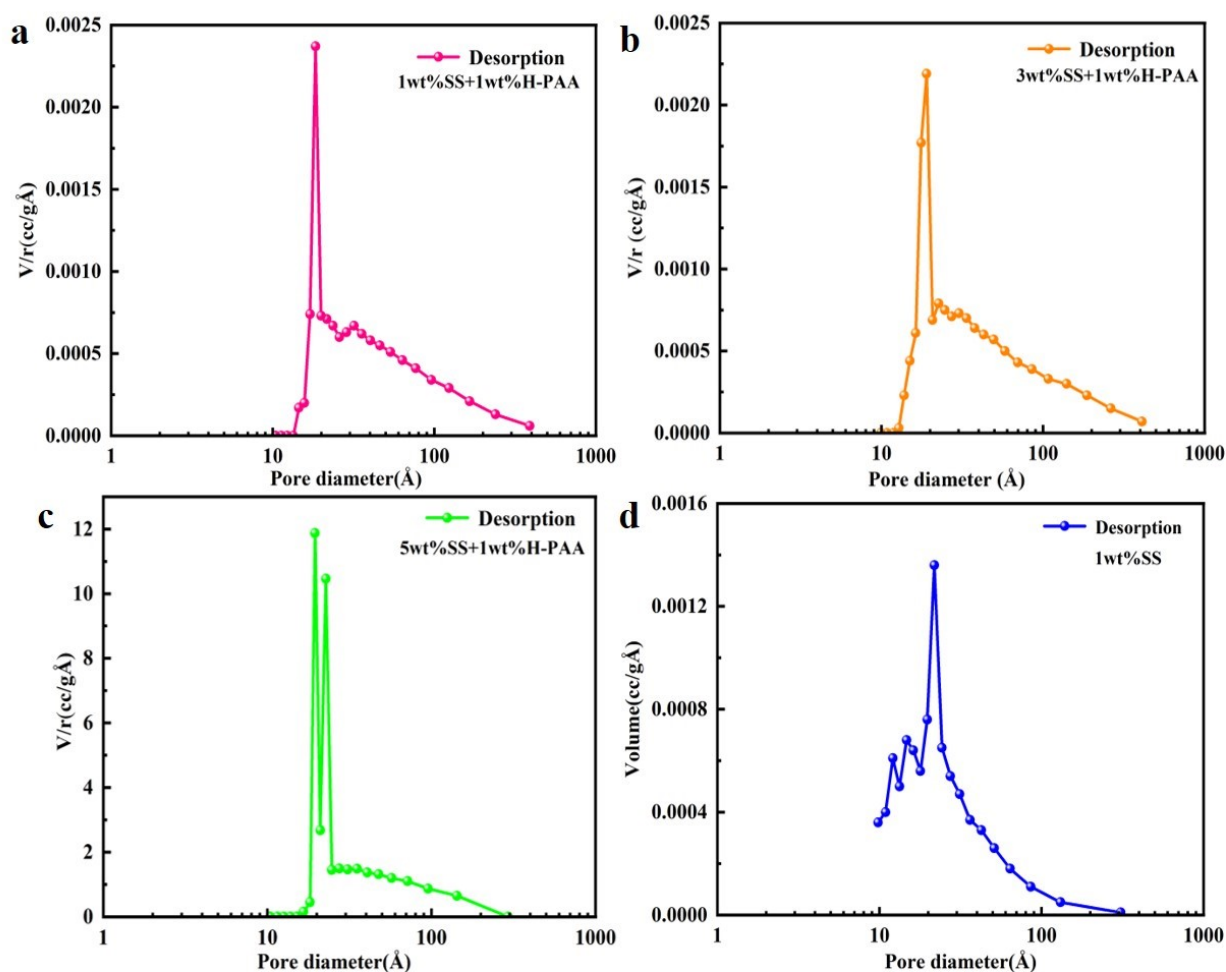


Fig. S3 The BJH desorption pore volume plot of soil mass stabilized by 1wt% H-PAA and (a) 1wt%, (b) 3wt% and (c) 5wt% SS; and (d) BJH desorption pore volume plot of soil mass stabilized by 1wt% SS.

Table S3 The texture property of soil mass stabilized by anionic polyelectrolytes and SS with different contents

Sample	SS Contents	Specific surface area (m ² /g)	Single-point total pore volume (cc/g)	Average pore radius (Å)	Mode pore diameter (Å)
1wt%H-PAA	1wt%	13.584	0.096244	141.7	18.4
1wt%H-PAA	3wt%	17.156	0.113129	131.9	19.0
1wt%H-PAA	5wt%	18.663	0.113684	63.9	19.5
None	1wt%	22.548	0.138663	34.3	24.8
Polymer					
1wt%H-PAA	1wt%	13.584	0.096244	141.7	18.4