

Supplementary information

## Hydrophilic porous polydimethylsiloxane sponge as a novel 3D matrix mimicking heterogeneous pores in soil for plant cultivation

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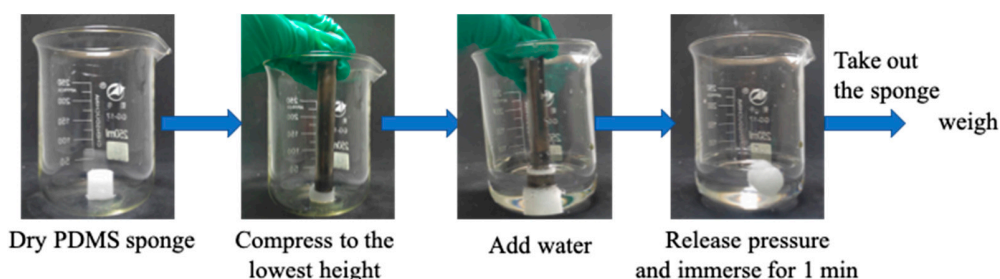


Figure S1. Compress-release induced water-intaking by PDMS sponge. A dry PDMS sponge is placed in a beaker. The sponge was compressed to its thinnest form. Water was added and immersed the compressed sponge. Release the sponge and keep it in water for 1 min. The passive absorption induced weight change was calculated as  $[(M_{\text{wet}} - M_{\text{dry}})/M_{\text{dry}}] \times 100\%$ , where  $M_{\text{wet}}$  and  $M_{\text{dry}}$  are weight of water-intaking wet sponge and dry sponge, respectively.

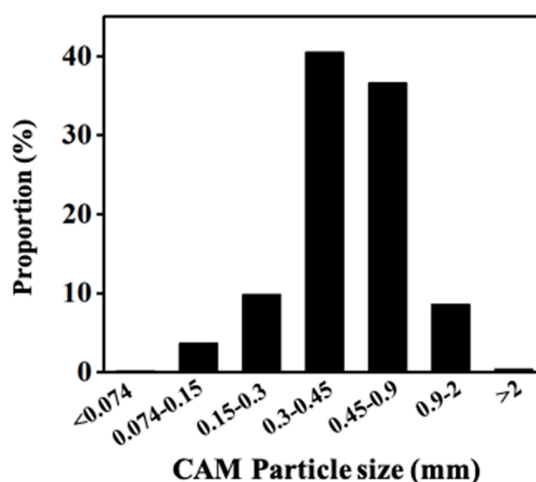


Figure S2. Particle size of citric acid monohydrate (CAM) characterized by sieving. 10 g CAM was analyzed by a sieve method [1].

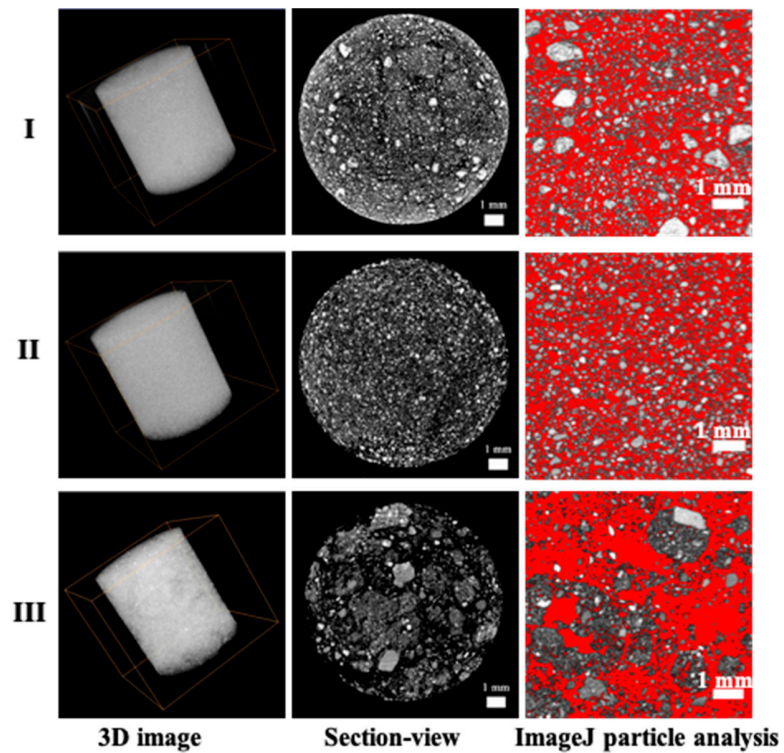


Figure S3. micro-CT characterization of soil specimens.

## References

1. Dishman, K.; Doolin, P.; Hoffman, J. Comparison of particle size of cracking catalyst determined by laser light scattering and dry sieve methods. *Ind Eng Chem Res.* **1993**, *32*(7), 1457-1463.