

Fig. SI1 Start-up period: (a) microscopic images of sludge particles after 10 days, (b) color of the sludge in the reactor, (c) microscopic images of sludge particles after 35 days, (d) microscopic images of sludge particles after 90-days, and (e-f) SEM observation of the anammox granular sludge.

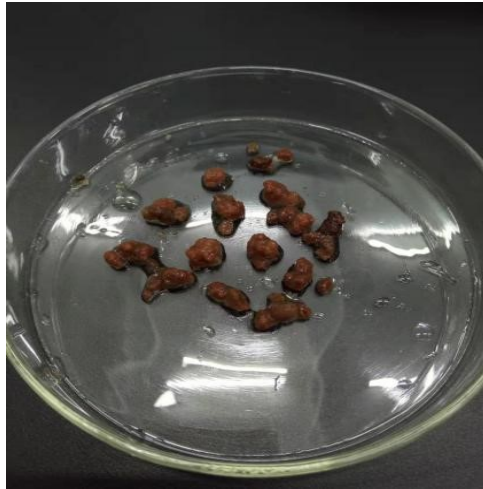
A**B****C**

Fig. SI2. During the lifting load stage (a) photographic image of granular sludge , (b) microscopic image of anammox sludge, and (c) photographic image of morphological floating granular sludge.

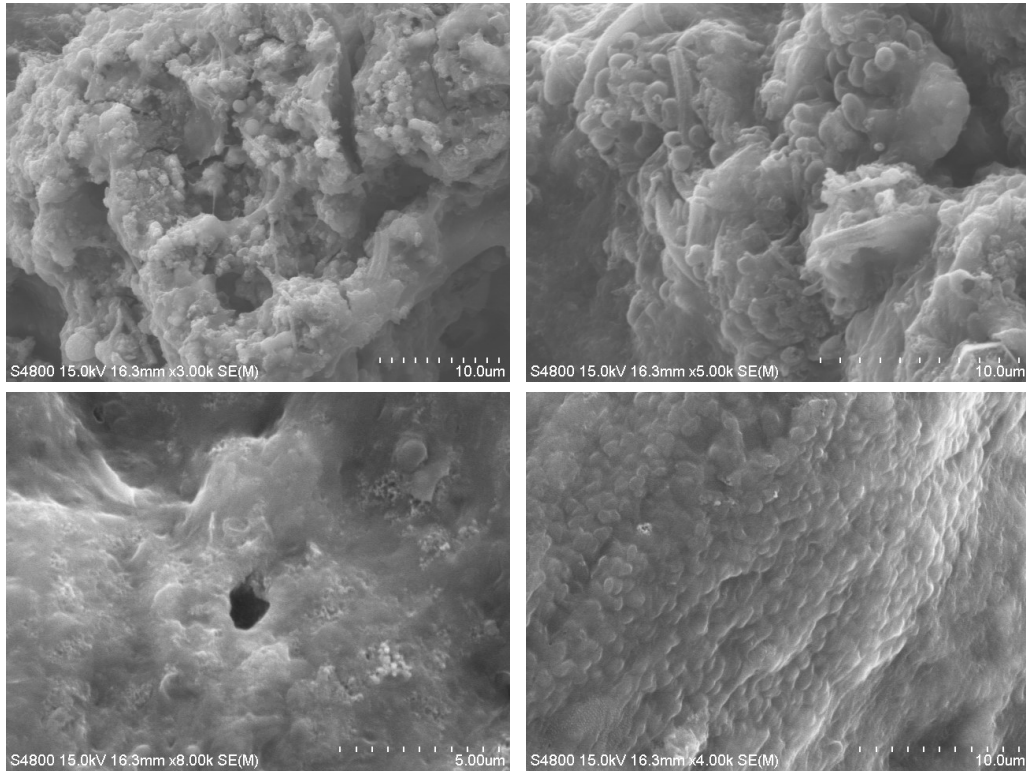


Fig. S13. SEM images of floated and precipitated particles.

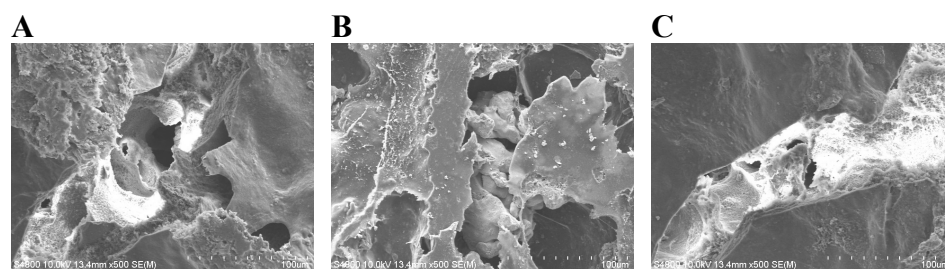


Fig. SI4. Scanning electron microscope for (a) PVA, (b) PVA-SA, and (c) PVA-SB gel carriers.

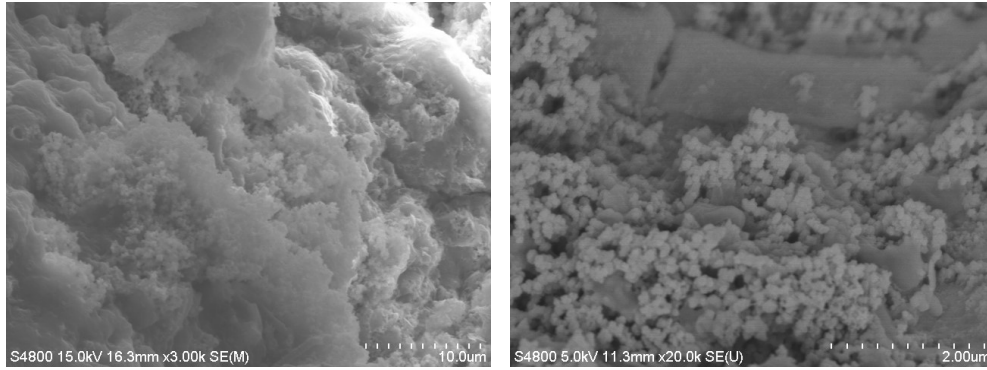


Fig. S15 Scanning electron microscope (SEM) imaging of mature granular sludge at Temperature 15 °C (left HRT 7h; right HRT 10h).