Electronic Supplementary Material (ESI) for RSC Advances.

Controllable Preparation of Ice Cream-Shaped Hollow Sphere Array

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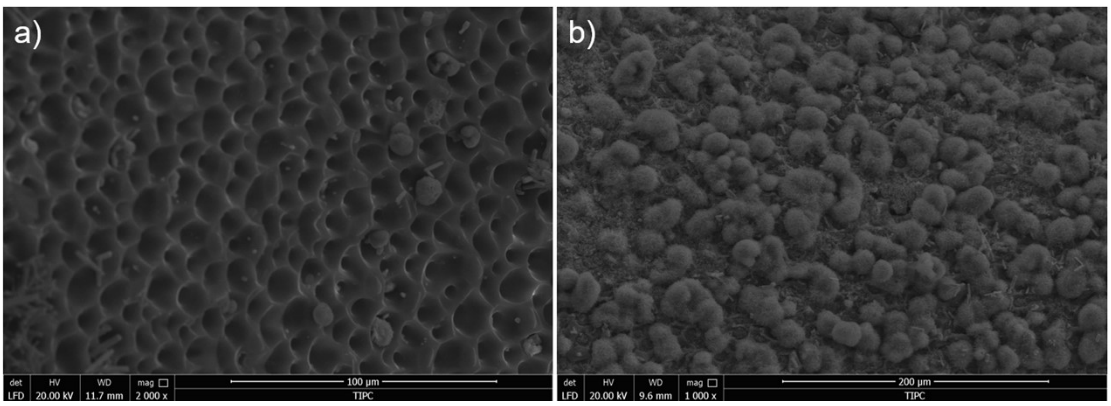

Figure S1. SEM images of (a) the substrate, made from the surface with apophysis, where microspheres could be formed in the holes. (b) the prepared microspheres with a diameter of 20 micrometers.

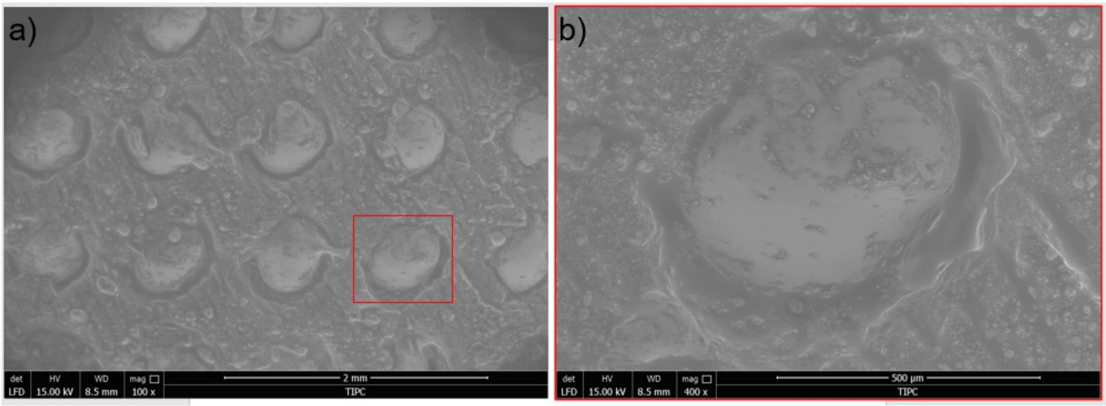

Fig. S2. Insufficient amount of liquid metal in the hole, but the liquid to solid transformation can still occur.

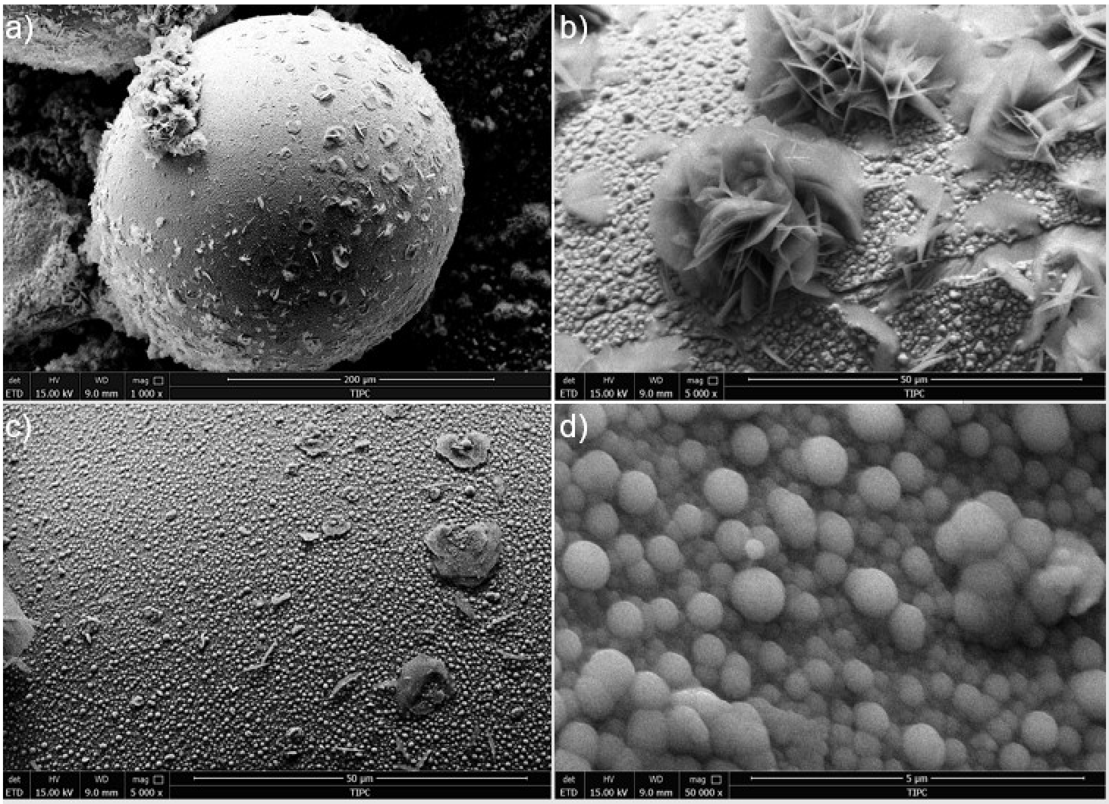

Fig. S3. The formation process of nanostructures under SEM investigation. The spherical seed crystal was produced at first and followed by the construction of petal-like structures.

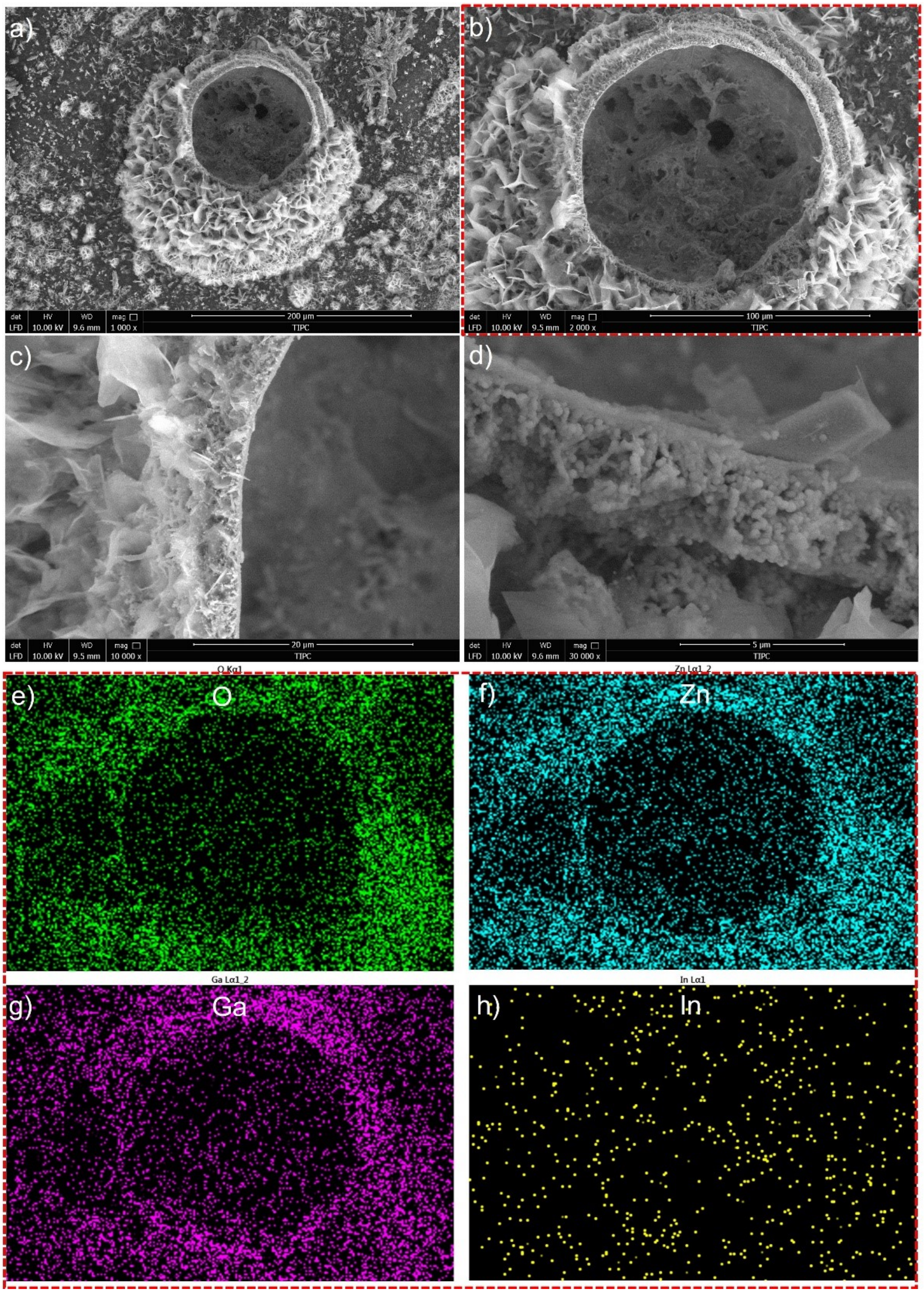

Fig. S4. SEM and EDS images of the cross section of hollow microspheres, which shows the thickness of the wall is 5 micrometers.

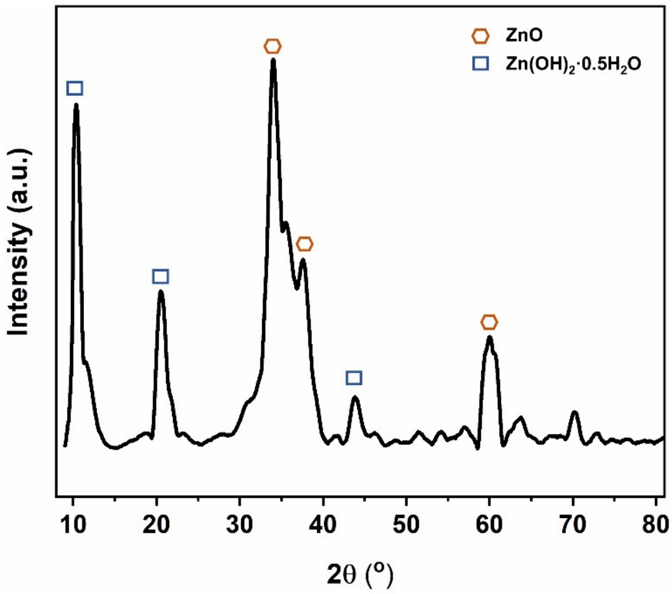

Fig. S5. X-Ray Diffraction (XRD) test of the hollow sphere. It is composed by ZnO and $Zn(OH)_2 0.5H_2O$.

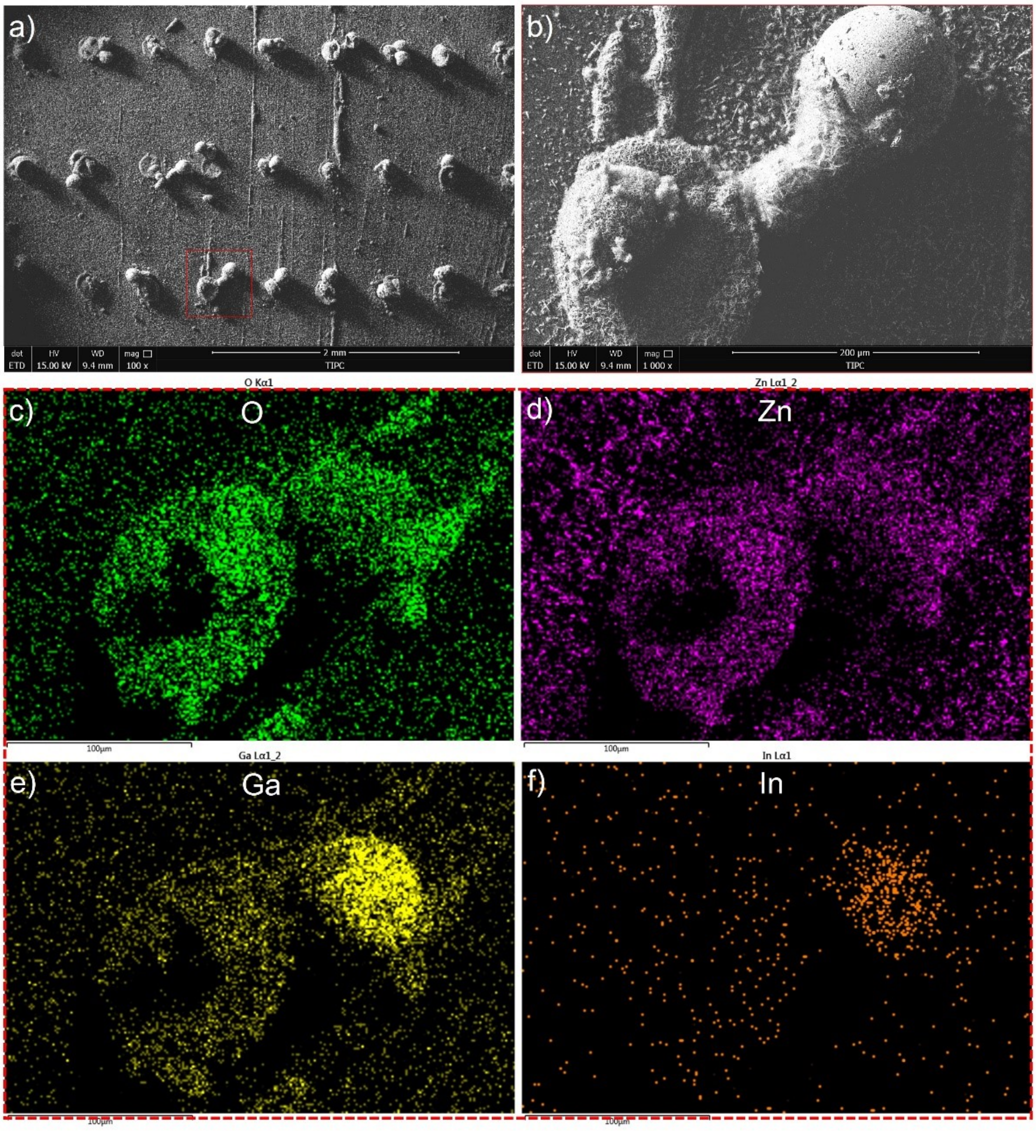

Fig. S6. SEM and EDS images of the cross section of hollow microspheres, which shows the excess EGaIn was expelled.

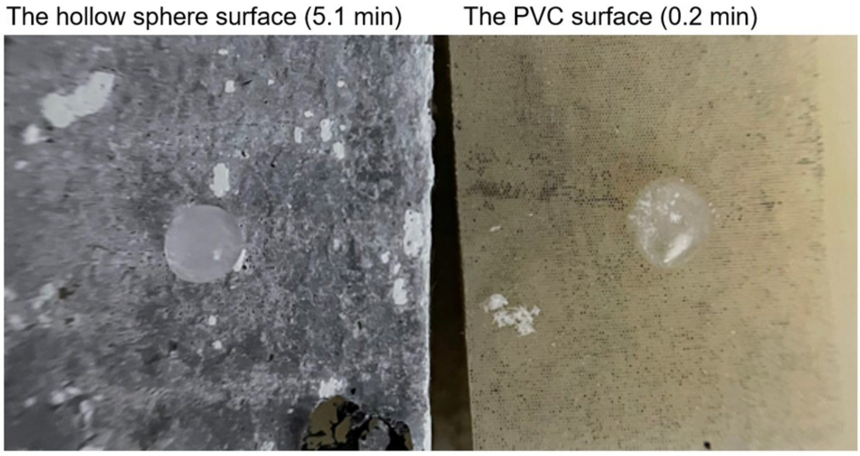

Fig. S7. The anti-icing performance. The droplets freeze on the hollow sphere surface and PVC surface is 5.1 min and 0.2 min, respectively.