Electronic Supplementary Material (ESI) for Soft Matter.


# Supporting Information

## Strong adhesion of poly(vinyl alcohol)-glycerol hydrogels onto metal substrates for marine antifouling application

Heng-Wei Zhu[a], Jia-Nan Zhang[a], Pei Su[b], Tianqi Liu[a], Changcheng He[a*], Danqing Feng[b*], and Huiliang Wang[a]

[a]Beijing Key Laboratory of Energy Conversion and Storage Materials, College of Chemistry, Beijing Normal University, Beijing 100875, P. R. China. E-mail: herbert@bnu.edu.cn

[b]State-Province Joint Engineering Laboratory of Marine Bioproducts and Technology, College of Ocean & Earth Sciences, Xiamen University, Xiamen, 361102, P. R. China. E-mail: dqfeng@xmu.edu.cn

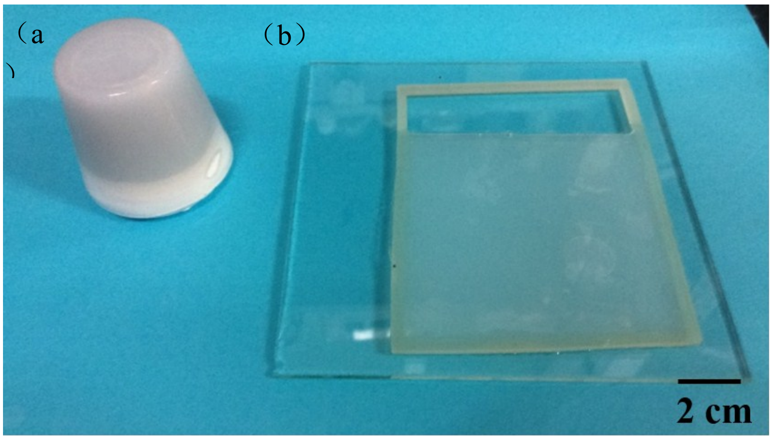


**Fig. S1.** Photograph of PVA-glycerol hydrogels. (a) Curved coating; (b) Planar coating.

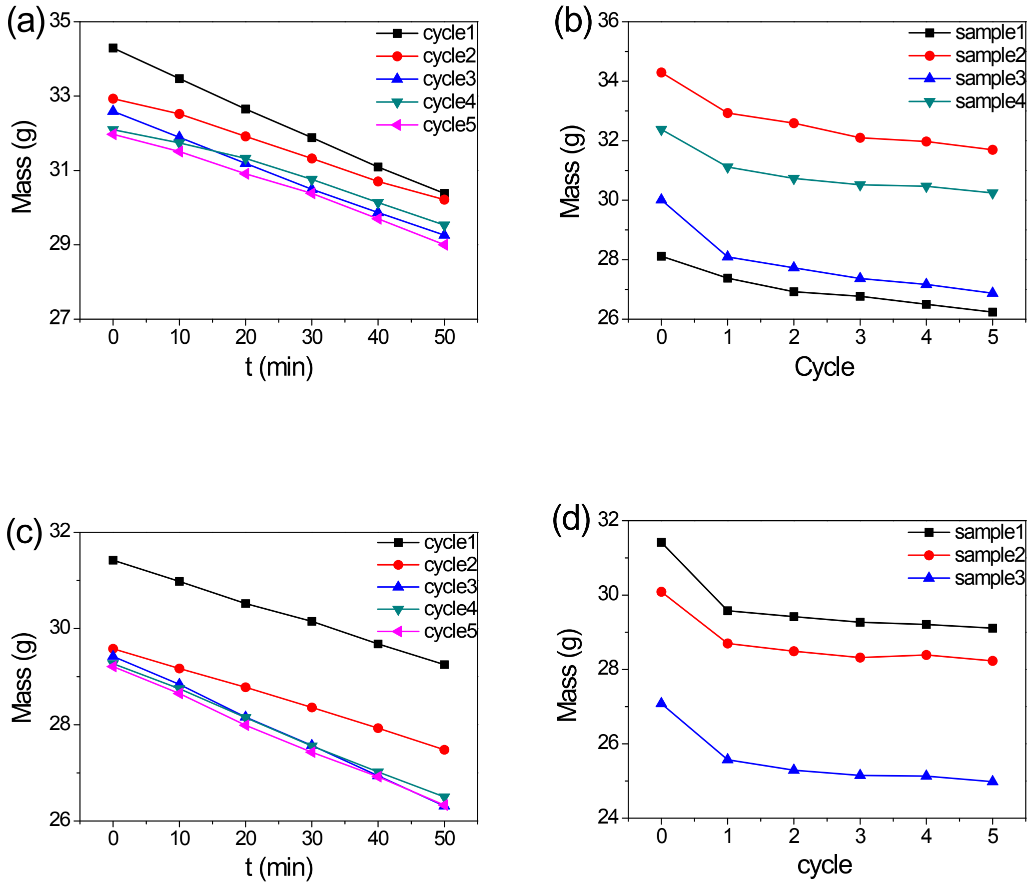


**Fig. S2** Quality change of PVA-glycerol hydrogel adhered to the stainless steel cup in the "water losing- absorbing" cycle. (a,c) The mass change of the PVA-glycerol hydrogel adhered by the ECA adhesive ($V_{ECA}$: $V_{paraffin}$ = 1:1) with drying time being immersed in deionized water (a) and simulated seawater (c); (b, d) Quality change of

PVA hydrogel after each "water losing- absorbing" cycle in deionized water (b) and simulated seawater (d).

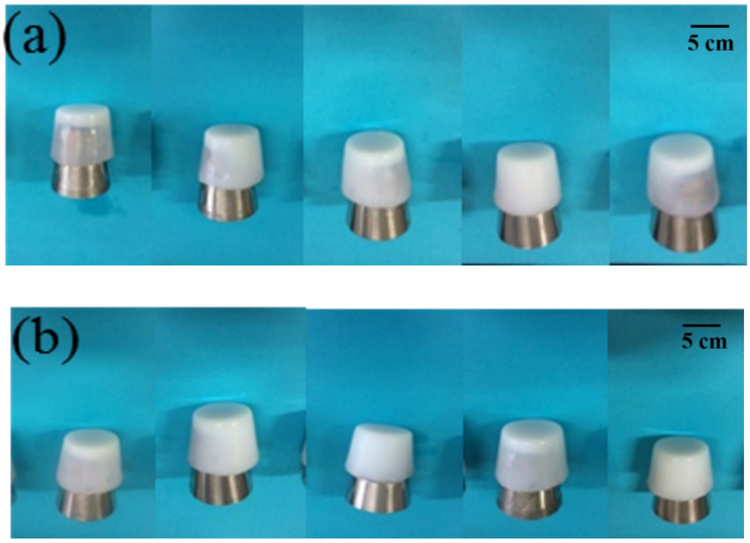


**Fig. S3** Photographs of the "PVA-glycerol gel/stainless steel cup" composite structure with ECA adhesive ($V_{ECA}$: $V_{paraffin}$ = 1:1) after several “water losing- absorbing” cycles in simulated seawater. Photos from left to right refer to samples after 1, 2, 3, 4 and 5 times water losing (a) and water absorbing treatment (b), respectively.