

Electronic Supplementary Information

Regenerable copper mesh based oil/water separator with switchable underwater oleophobicity

Yi Chen,^{ab} Xinda Li,^a Mary Glasper,^{ac} Li, Liu,^a Hyun-Joong Chung^{*a}, John A Nychka^{*a}

^aDepartment of Chemical and Material Engineering, University of Alberta, Edmonton, Alberta, T6G2V4 Canada

^bScion, Private Bag 3020, Rotorua, 3046, New Zealand

^cDepartment of Human Ecology, University of Alberta, Edmonton, Alberta, T6G2N1 Canada

Corresponding Author Email: chung3@ualberta.ca; jnychka@ualberta.ca

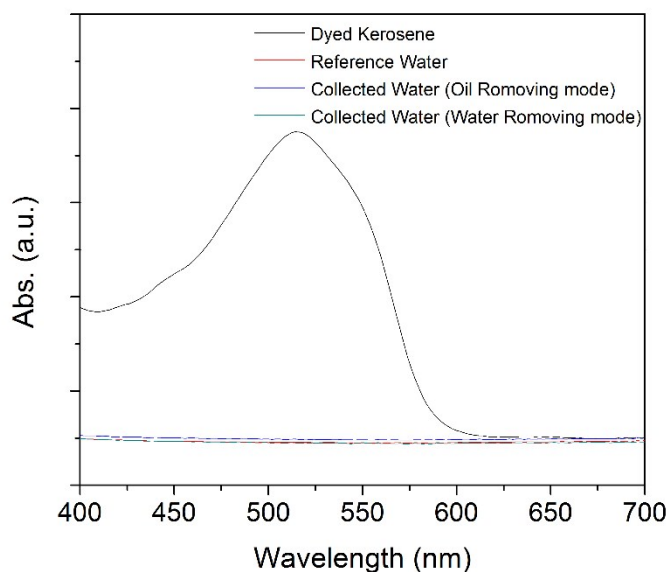


Fig S1. UV-Visible absorption spectrum of dyed kerosene, reference water and collected water after separation.

UV-visible absorption spectra were recorded by a UV-vis spectrophotometer (Perkin-Elmer NIR-UV, USA), to determine if there was oil left in the water after “water-removing” and “oil-removing” mode separation. Oil (Kerosene) was dyed with Oil Red O (1 wt%, Sigma-Aldrich) with typical absorption peak at around 518 nm. UV-Visible absorption spectra of water after

separation was compared with dyed oil (Fig. S1). There was no discernible dye absorption peak observed of the water separated using both “water-removing” and “oil-removing” mode, which suggests that the separated water contains no oil.¹⁻³

Reference

1. K. Rohrbach, Y. Li, H. Zhu, Z. Liu, J. Dai, J. Andreasen and L. Hu, *Chem. Commun.*, 2014, 50, 13296.
2. C-F Wang, H-C. Huang and L-T Chen, *Sci. Rep.*, 2015, 5, 14294.
3. Y. Chen, L. Liu, H-J. Chung and J. A. Nychka, *RSC Adv.*, 2015, 5, 91001.