



## Drag crisis moderation by thin air layers sustained on superhydrophobic spheres falling in water

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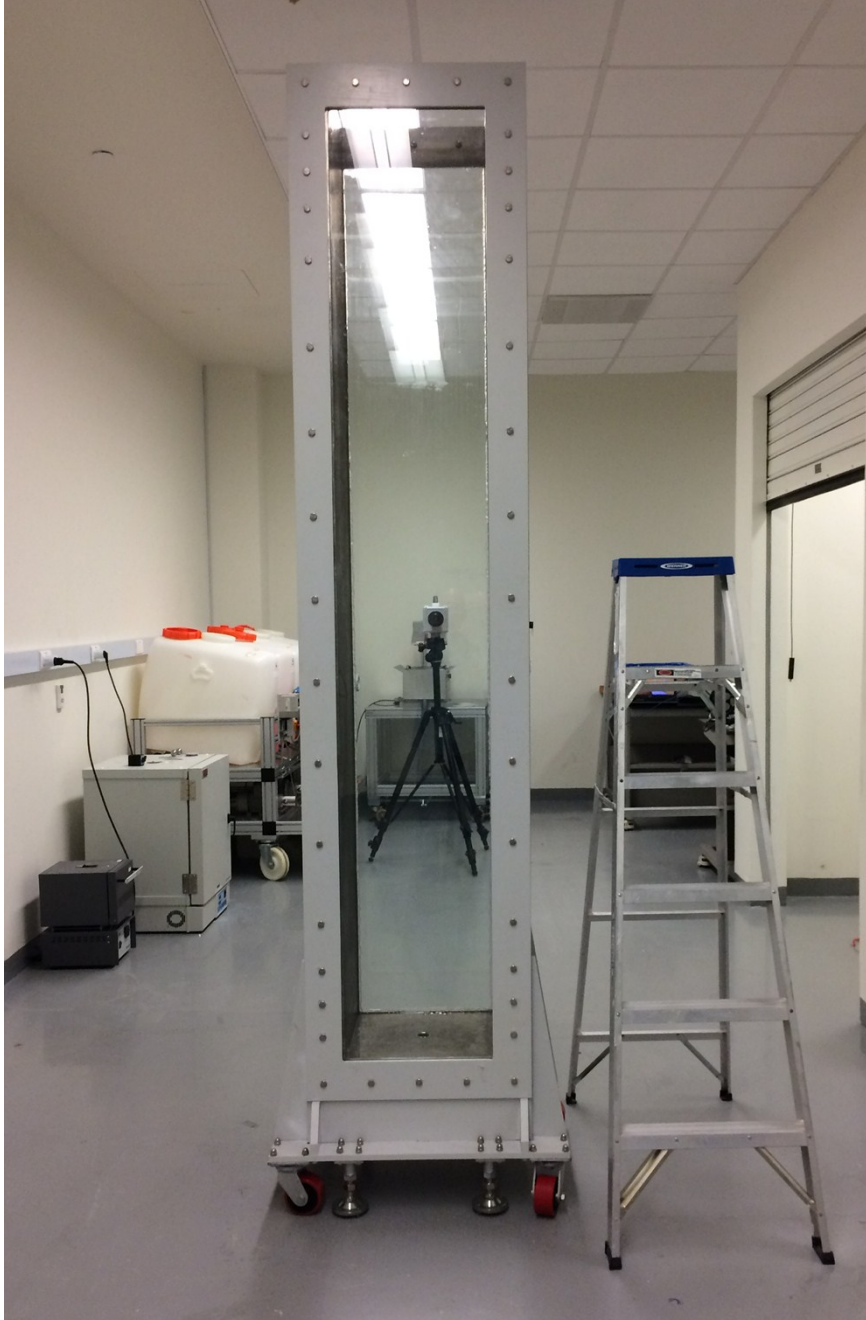
**SPI Supplementary Figures: S1, S2, S3.**

**Drag crisis moderation by thin air layers sustained on  
superhydrophobic spheres falling in water.**

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**Fig. S1.** Photograph of the 2.5 meter water tank. The high speed camera used to monitor the sphere fall in the tank can be seen in the background.

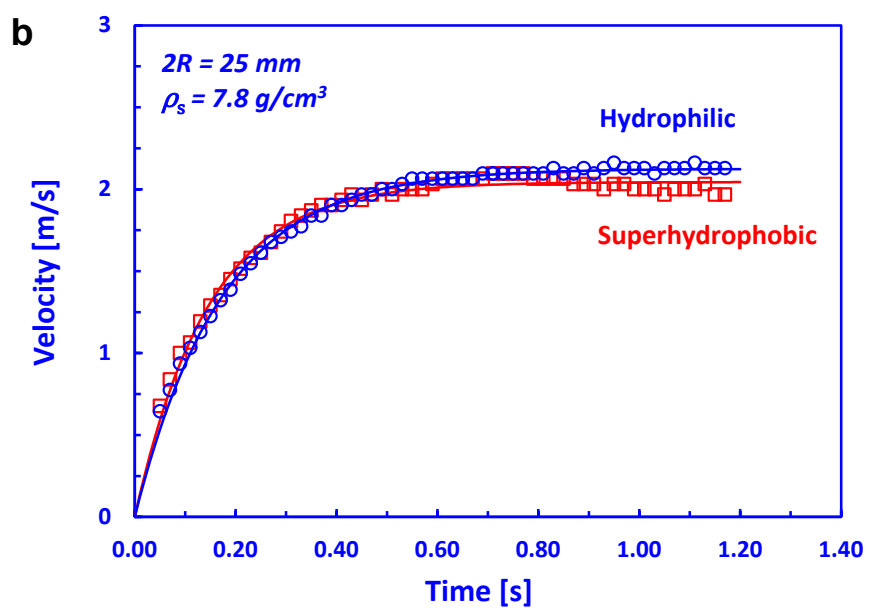
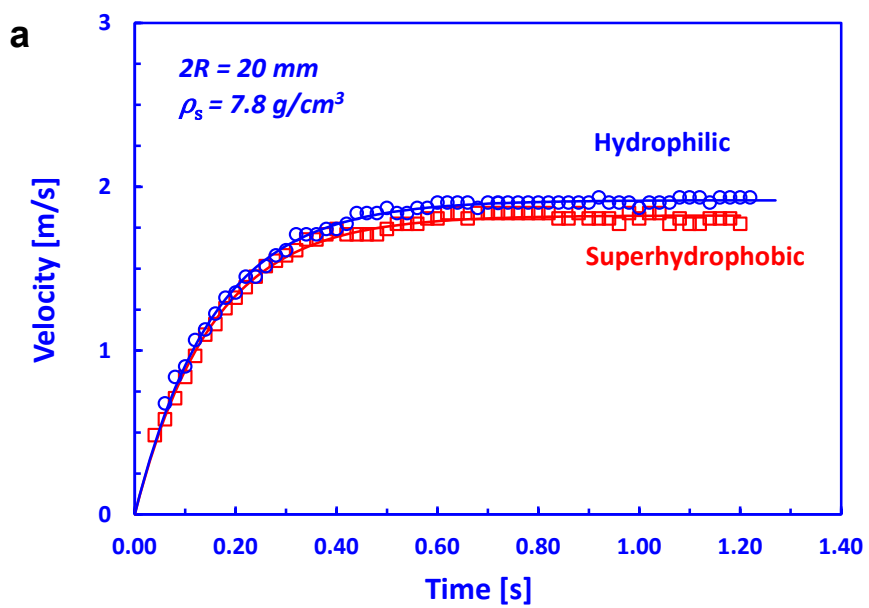


Fig. S2. (a, b)

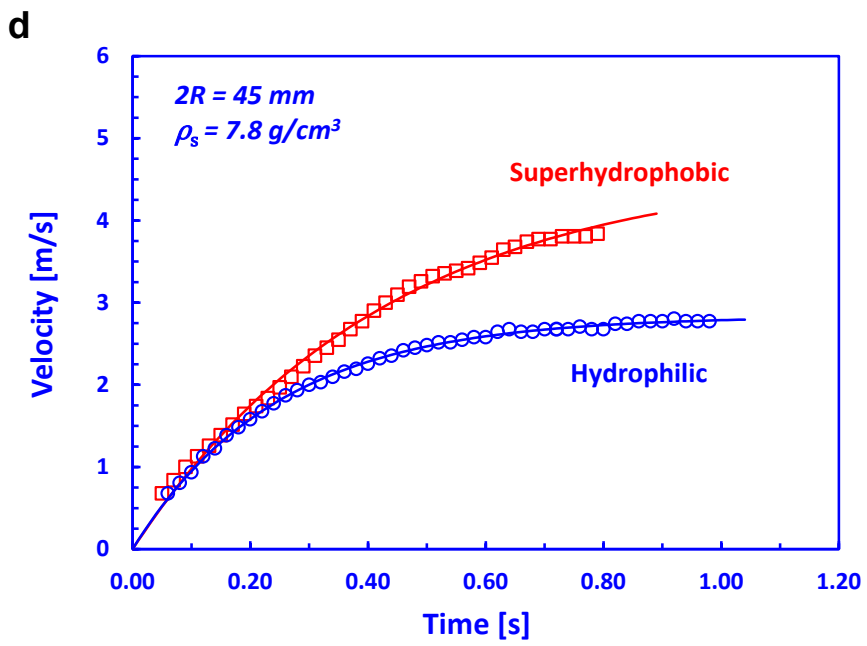
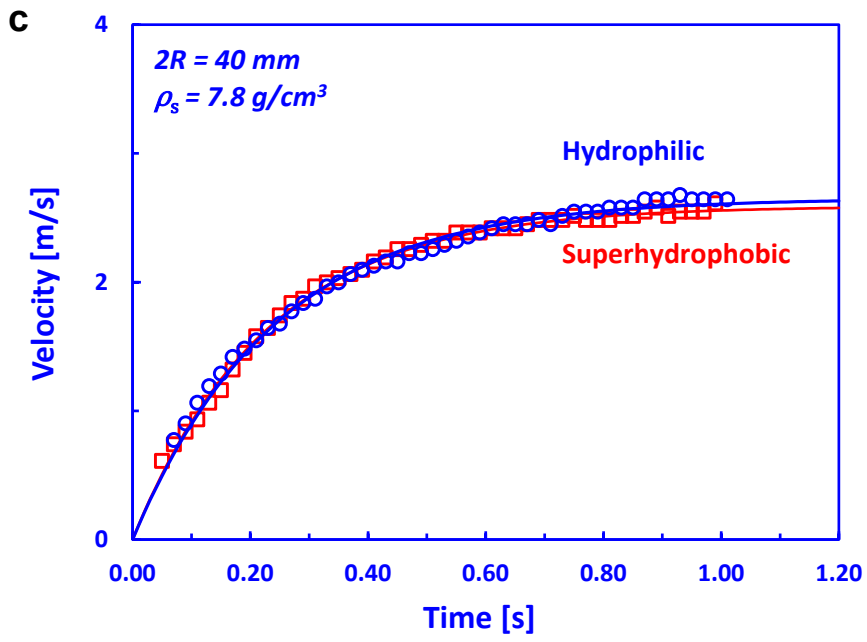
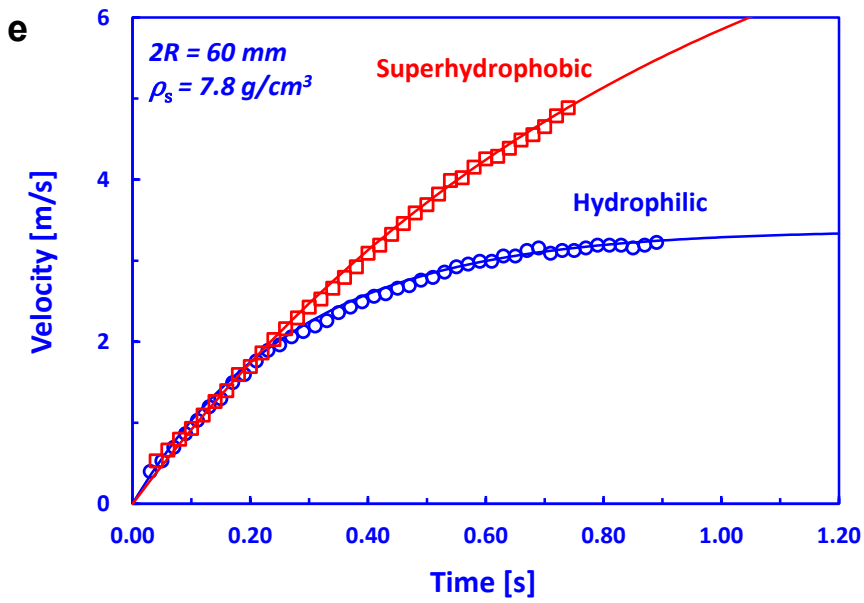


Fig. S2. (c, d)



**Fig. S2.** Velocity vs time data for spheres fall in the 2.5 m tank, for the case of steel spheres of size: (a) 20 mm; (b) 25 mm; (c) 40 mm; (d) 45 mm; (e) 60 mm. Compared are data for superhydrophobic surface sphere (red squares) and unmodified hydrophilic surface sphere (blue circles). The solid line for each data set is a formal fit with the function  $U(t) = U_T(1 - e^{-t/\tau})$ .

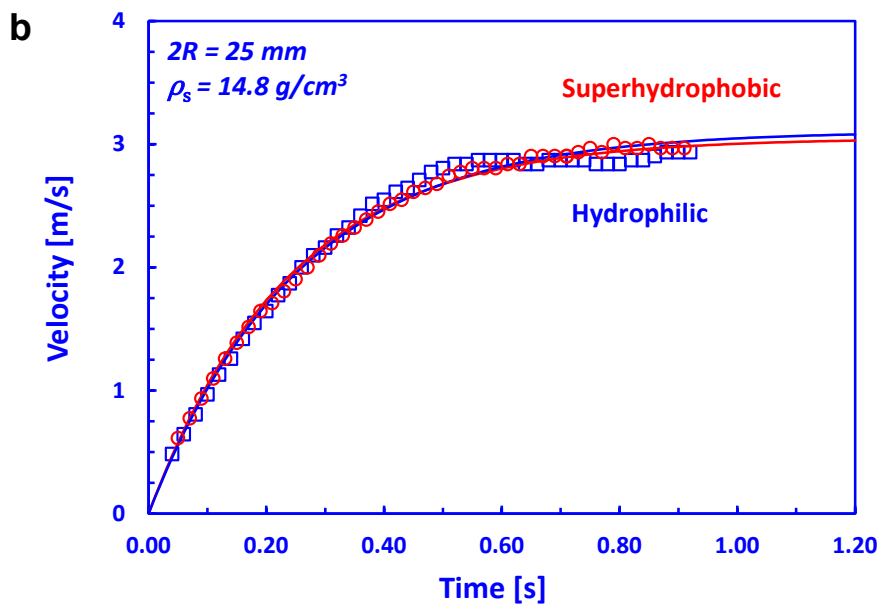
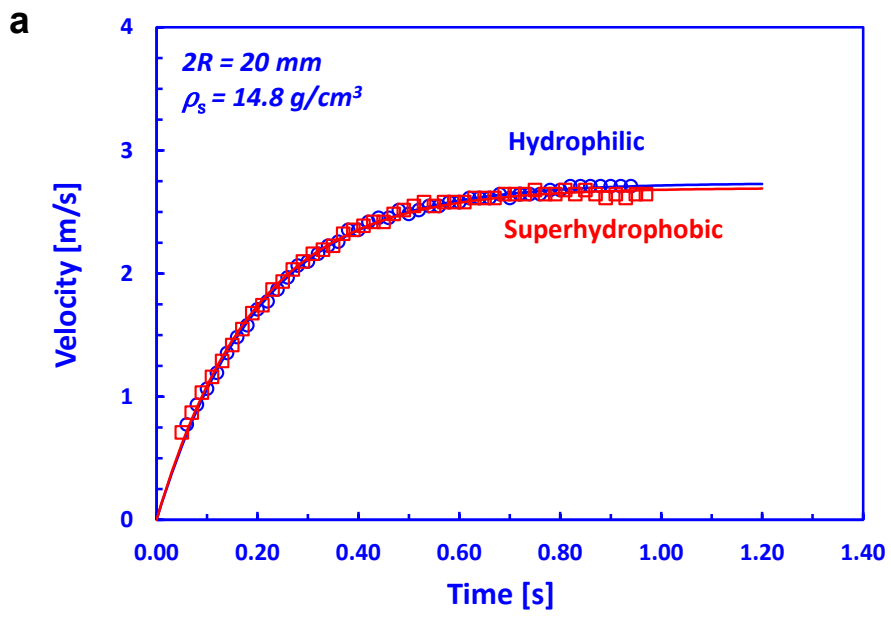


Fig. S3. (a, b)

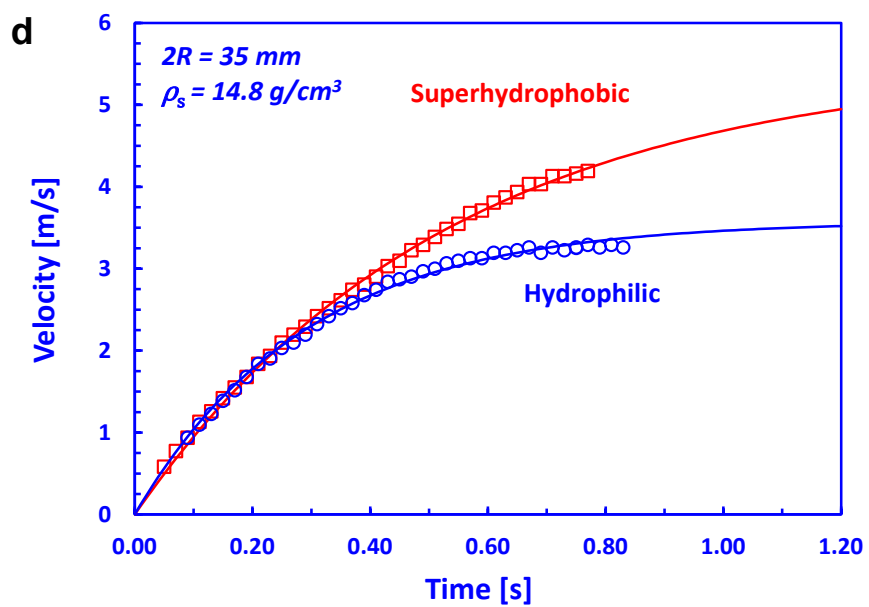
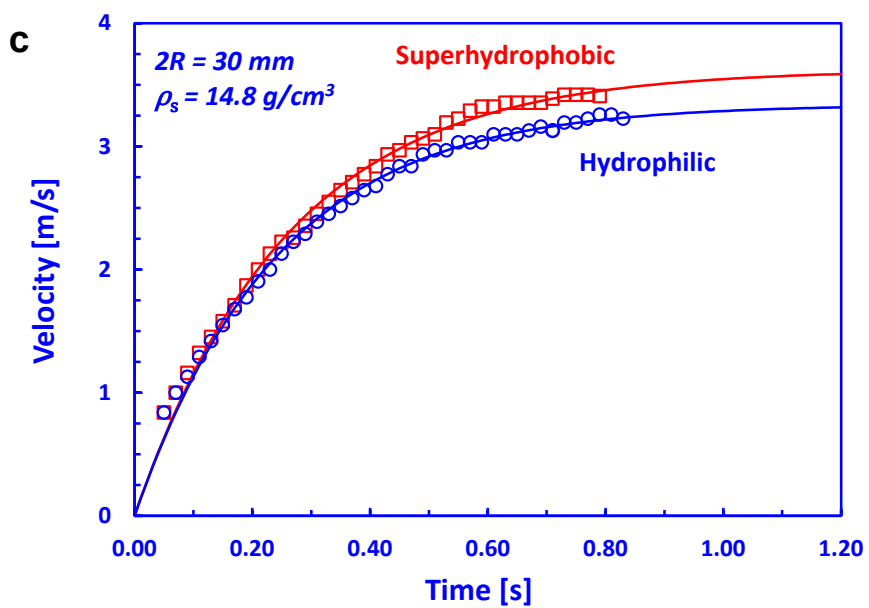


Fig. S3. (c, d)



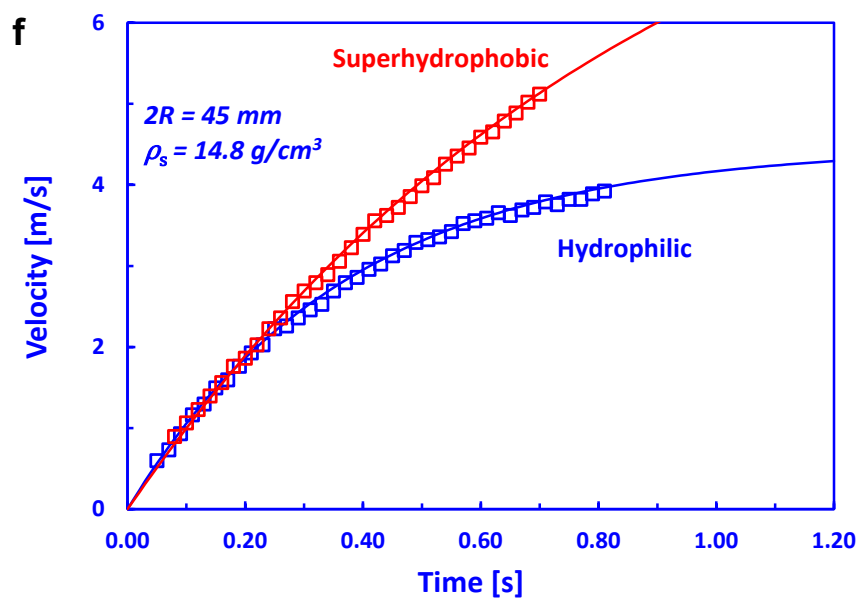
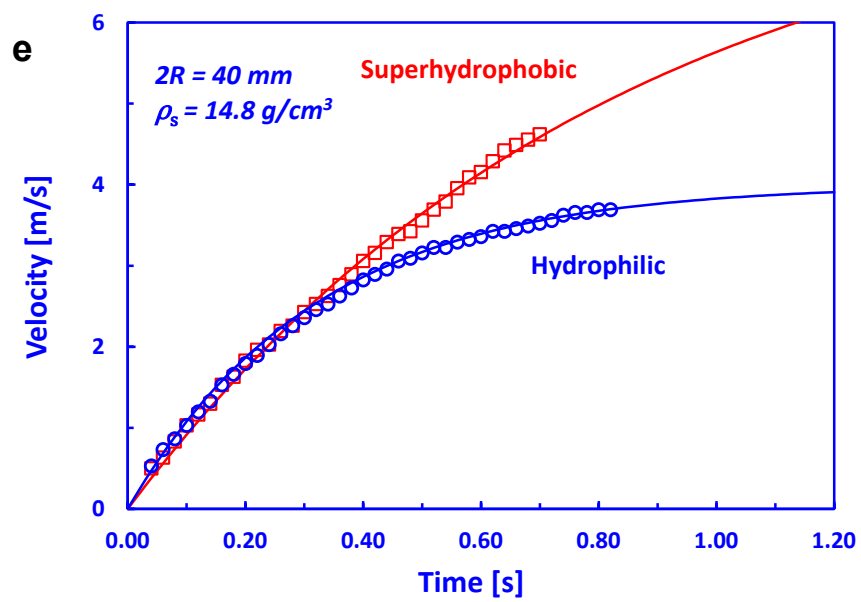
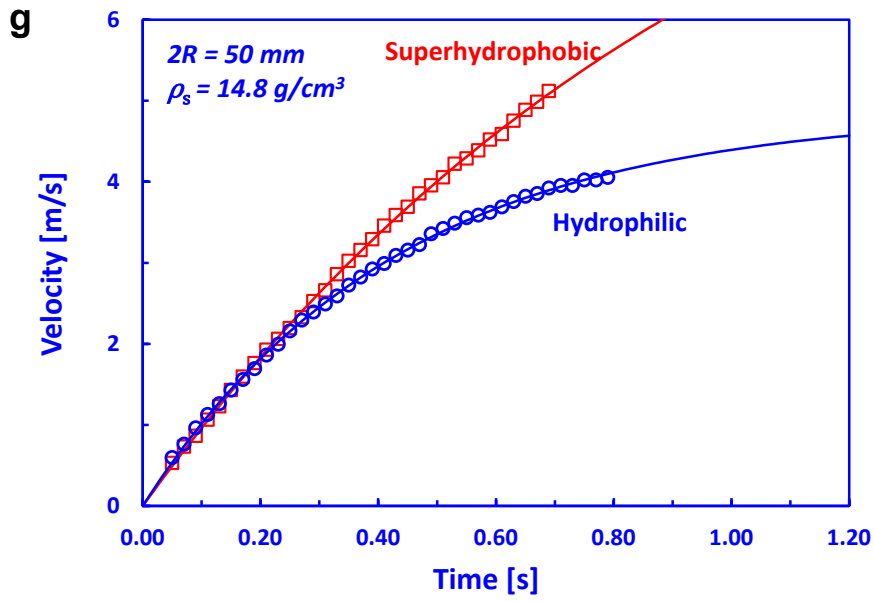


Fig. S3. (e, f)



**Fig. S3.** Velocity vs time data for spheres fall in the 2.5 m tank, for the case of tungsten carbide spheres of size: (a) 20 mm; (b) 25 mm; (c) 30 mm; (d) 35 mm; (e) 40 mm; (f) 45 mm; (g) 50 mm. Compared are data for superhydrophobic surface sphere (red squares) and unmodified hydrophilic surface sphere (blue circles). The solid line for each data set is formal fit with the function  $U(t) = U_T(1 - e^{-t/\tau})$ .