coatings

Supplementary Materials

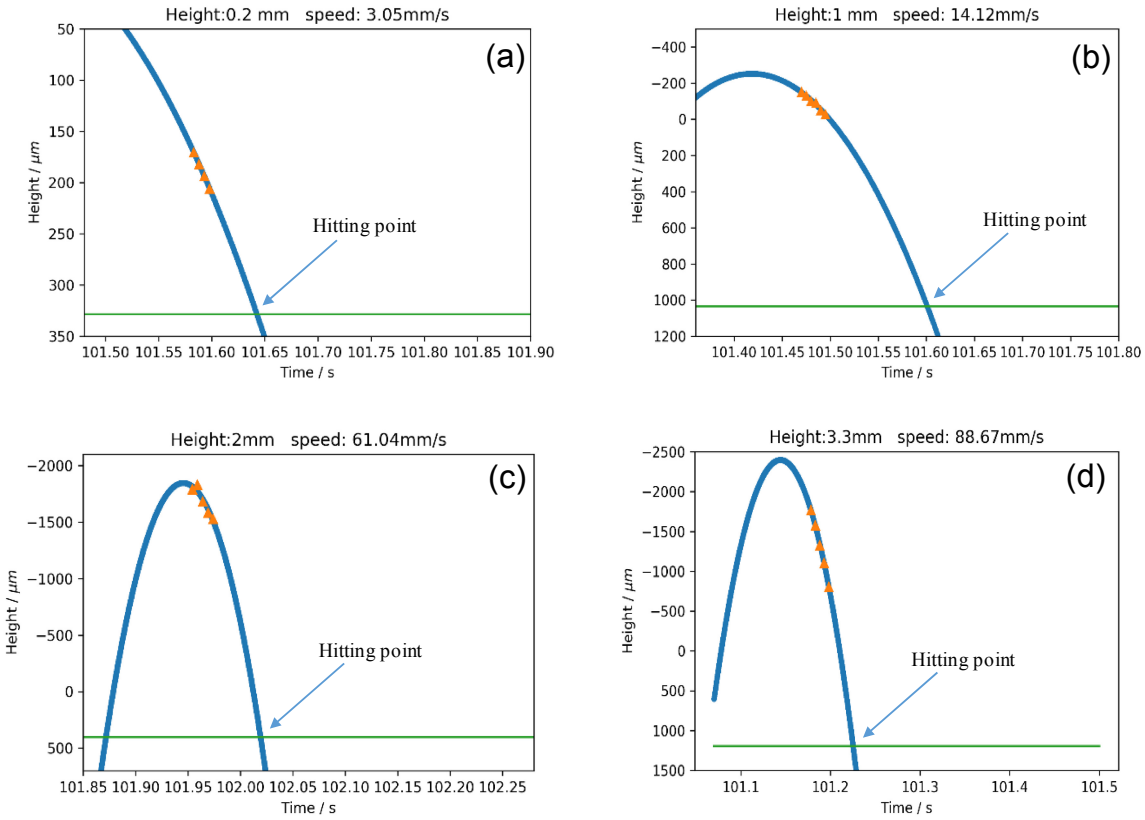

Figure S1. Hitting speed of the pin: (**a**) 0.2 mm; (**b**) 1 mm; (**c**) 2 mm; (**d**) 3.3 mm. The hitting speed of the pin on the sample was calculated from the height change and time. By selecting a time period that includes the drop of the pin. The change of height with time can be fit with a parabolic curve, and then the velocity before hitting can be calculated. The data points are discrete and not dense, and therefore the hitting speed is estimated. Note that the height direction is reversed, i.e., the larger the height, the closer the pin to the sample. All height values are relative. The difference between the lowest height and highest height indicates the lifted height of the experiment. However, due to some fluctuation, the lifted height can vary from time to time. The indicated values are the average.

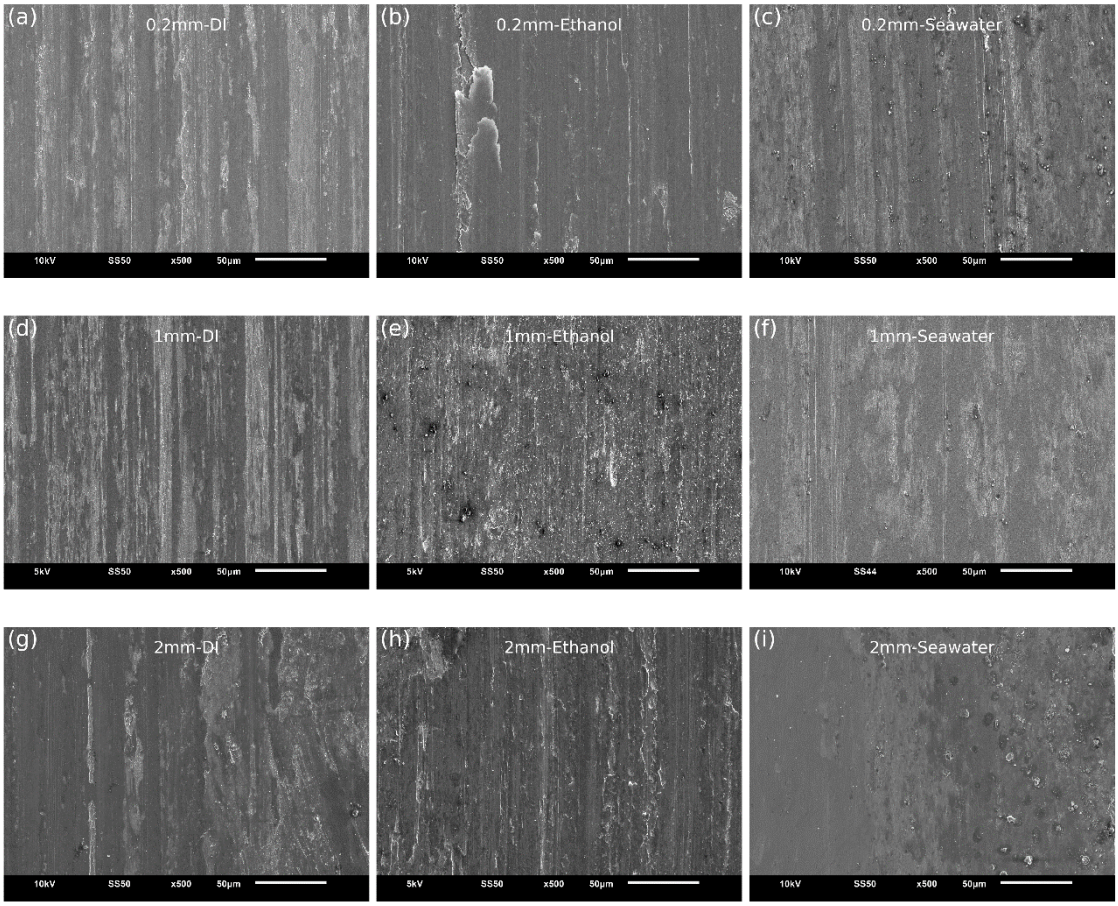

Figure S2. The micrograph of worn surfaces imaged with Scanning Electron Microscope: (**a**–**c**) show the worn surfaces of the samples subjected to 0.2 mm lifted-height impact in deionized (DI) water, ethanol, and sea water respectively; (**d**–**f**) show the worn surfaces of the samples subjected to 1 mm lifted-height impact in DI water, ethanol, and sea water respectively; (**g**–**i**) show the worn surfaces of the samples subjected to 2 mm lifted-height impact in DI water, ethanol, and sea water respectively. The combination of lifted height and wear medium is shown as text for each subfigure. The lifted height of 3.3 mm is not applicable.

Table S1. Estimated hitting speed and angle of the pin on the sample for various lifted heights.

Lifted Height (mm)	Hitting Speed (mm/s)	Hitting Angle (°)
0.2	3.05	1.74
1	14.12	8.03
2	61.04	31.40
3.3	88.67	41.56