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Cavitation during wire brushing. BO LI, JUN ZOU, CHEN JI, Zhejiang University — In our daily life, brush is often used to scrub the surface of objects, for example, teeth, pots, shoes, pool, etc. And cleaning rust and stripping paint are accomplished using wire brush. Wire brushes also can be used to clean the teeth for large animals, such as horses, crocodiles. By observing brushing process in water, we capture the cavitation phenomenon on the track of moving brush wire. It shows that the cavitation also can affect the surface. In order to take clear and entire pictures of cavity, a simplified model of one stainless steel wire brushing a boss is adopted in our experiment. A transparent organic tank filled with deionized water is used as a view box. And a high speed video camera is used to record the sequences. In experiment, ambient pressure is atmospheric pressure and deionized water temperature is kept at home temperature. An obvious beautiful flabellate cavity zone appears behind the moving steel wire. The fluctuation of pressure near cavity is recorded by a hydrophone. More movies and pictures are used to show the behaviors of cavitation bubble following a restoring wire. Beautiful tracking cavitation bubble cluster is captured and recorded to show.

Bo Li
Zhejiang University

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