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**New drop deposition technique for wettability characterization of under-liquid superoleophobic surfaces** SUSHANTA MITRA, PRASHANT WAGHMARE, SIDDHARTHA DAS, University of Alberta — From understanding the remarkable self-cleaning behavior of fish scales to the preparation of surfaces that will counter the destructive effects of oil-spills, there has been a remarkable interest in understanding the wettability of a solid in an “under-liquid” configuration. Like surfaces in air, here too, the main focus remain in designing surfaces (such as fish scales) that exhibit repelling behavior to a multiple other liquids in this “under-liquid” state. Problem occurs, just as with surfaces in air, when this “under-liquid” surface is too repelling to a given liquid. In that case, the standard drop deposition technique is unable to deposit a drop that is not “interfered” by the needle holding the drop. Here we shall discuss a unique technique that ensures that we achieve a “needle-free” deposited drop on the under-liquid surface. A drop is produced at the end of the needle, with the needle placed inside the liquid bath. Then the needle holding the drop is moved away from the concerned surface, and the moment this drop-needle assembly hits the liquid-air or liquid-another-liquid (a layer of this another liquid is intentionally created at the location where the liquid bath is exhausted), the surface tension effects will ensure that the drop is detached from the needle.

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