Effects of pillar geometries on controllable magneto-actuation and liquid spreading of micropillar arrays

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Controllable magneto-actuation of micropillar arrays can be achieved by pre-programming alignments of magnetic particles under external magnetic field. Actuation of micropillar is remarkably distinguished according to axes direction of applied magnetic field and alignments. Here, we demonstrate reversible bending and twisting actuation with negligible magneto-hysteresis during magnetization and demagnetization processes. Finally, we will discuss directed liquid spreading on micropillar arrays dependent to their pillar shapes and the actuation modes.