Supporting information

S-1

**Preparation of honeycomb-patterned film**
Polystyrene (PSt) and amphiphilic copolymer 1 (Figure S-1(a)) were dissolved in chloroform to prepare 5.0mg/mL solution (the mixing ration of PSt and 1 was ten-to-one). The solution (c.a. 7.5mL) was cast onto a Petri dish ($\phi$=9cm), and then, humid air (relative humidity was c.a. 90%) was applied at its flow velocity of 4L/min. After complete evaporation of solvent, the sample was observed by SEM (Figure S-1(b)). After preparation of the honeycomb-patterned film, the surfaces of the films were treated by UV-O$_3$ to make surface hydrophilic.

**Preparation of polyacrylamide gel mold**
Acrylamide (TCI/EP), N,N’-bisacrylamide (Wako/EP), and ammonium persulfate (APS, Wako/EP) were dissolved in 50mL of pure water. After three times of degassed and N2 purge cycles, N,N,N’,N’,-tetramethylenediamine (TEMED, TCI/GR) was mixed in the solution with vigorous stirring. The solution was cast onto the honeycomb-patterned film and placed for 2 hours. After formation of the gel, the template honeycomb-patterned film was removed by dissolving in toluene. The surface structure was observed by optical microscopy (Figure S-1(c)).

**Pattern transferring on PVA film**
Polyvinyl alcohol (PVA, Wako/EP) was dissolved in pure water to prepare 0.5mg/mL solution. Two drops of solution was spin casting on a glass substrate (18mm square) at 1,000r.p.m. After evaporation of water, the gel template was placed and compressed. After removing the template, the surface pattern was observed by optical microscopy (Figure S-1(d)).
Figure S-1. The chemical structure of \( \mathbf{1} \) (a), a SEM image of the templater polystyrene honeycomb-patterned film (b), optical micrographs of polyacrylamide hydrogel micro lens array (c), and transferred structure on the PVA film (d), respectively.

S-2
Figure S-2. Schematic illustration of compression devise.