

Supplementary Information Movie Caption

Supplementary Information Movie 1:

The conformation change of the polyelectrolyte chains in the mixture solvent from the compact states to the semi-flexible states. $N_p = 10$ chains are included in a simulation box with the periodic boundary conditions. We change the interaction parameter from $\chi = 2.35$ to $\chi = 1.8$ at $t = 0$. Here, $\chi = 2.35$ corresponds to the phase-separated state ($\chi > \chi_t$). The colors of the beads represent the ionization degree (see Fig. 2(a)).

Supplementary Information Movie 2:

The conformation change of the polyelectrolyte chains in the mixture solvent from the semi-flexible chains to compact states. We change the interaction parameter from $\chi = 1.8$ to $\chi = 2.35$ at $t = 0$. (see Fig. 2(b)).

Supplementary Information Movie 3:

The detailed conformation change of the polyelectrolyte chain in the mixture solvent from the elongated state to the compact state included in a droplet. We change the interaction parameter from $\chi = 2.1$ to $\chi = 2.3$ at $t = 0$. Here, $\chi = 2.3$ corresponds to the mixed state ($\chi < \chi_t$). The colors of the beads represent the ionization degree (see Fig. 3(a)).

Supplementary Information Movie 4:

The detailed conformation change of the polyelectrolyte chain in the mixture solvent from the compact state to the elongated. We change the interaction parameter from $\chi = 2.3$ to $\chi = 2.1$ at $t = 0$. (see Fig. 3(b)).