Convolutional Neural Network-based Colloidal Self-Assembly State Classification †

SUPPLEMENTARY INFORMATION

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Table S1. Number of trajectories simulated from the Brownian Dynamics simulation under each voltage level, and the time intervals for configuration sampling from each of the 1000s trajectory.

V level/Time step	5 s	10 s	30 s
1	2	25	0
2	1	25	0
3	2	30	0
4	1	45	2

Table S2. Parameters for BD simulations. a. Particle diameter, b. absolute temperature, c. Debye screening length, d. particle and wall Stern potential, e. input levels, f. Clausius-Mosotti factor for an AC field frequency at 1 MHz, g. medium dielectric permittivity, h. electrode spacing, and i. number of particles in the batch system.

Parameter	Value
$2\alpha(nm)^{[a]}$	2870
$T(K)^{[b]}$	298
$\kappa^{-1}(nm)^{[c]}$	10
$\psi(mV)^{[d]}$	-50.0
$\lambda^{[e]}$	0.2,0.9,2.0,19.7
$f_{CM}^{[f]}$	-0.4667
$\varepsilon_m/\varepsilon_0^{[g]}$	78
$d_g(\mu m)^{[h]}$	91
$N^{[i]}$	300

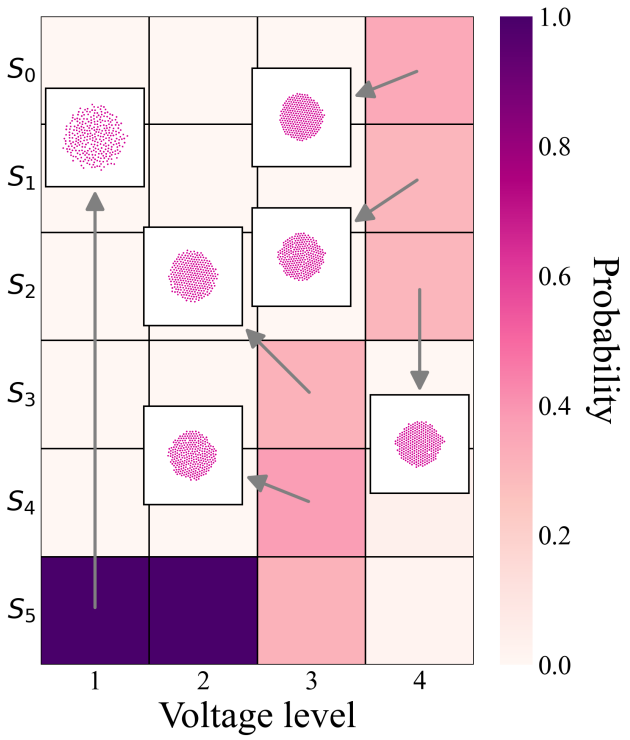

Fig. S1. Example of a phase diagram in terms of four discrete voltages with the proposed descriptor, indicating the transition of the system phase as a function of the controlling variable voltage.