## SUPPORTING INFORMATION

## Simple Coating with pH Responsive Polymer Functionalized Silica Nanoparticles of Mixed Sizes for Controlled Surface Properties

Yohei Kotsuchibashi<sup>a</sup>, Yinan Wang<sup>a</sup>, Young-Jin Kim<sup>b</sup>, Mitsuhiro Ebara<sup>b</sup>, Takao Aoyagi<sup>b</sup>, Ravin Narain<sup>a</sup>,\*

<sup>a</sup>Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta, T6G 2V4, Canada

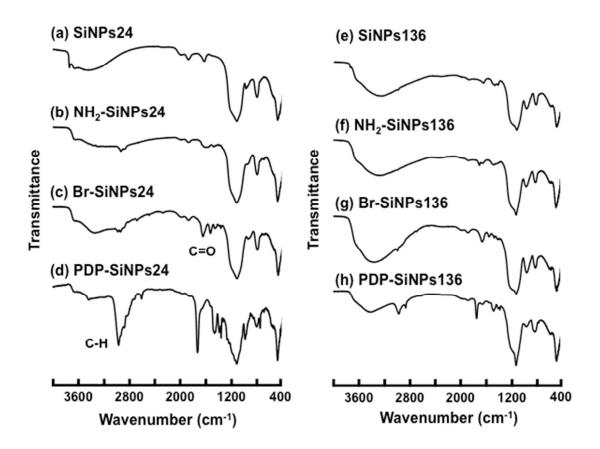
<sup>b</sup>Biomaterials Unit, International Center for Materials Nanoarchitectonics (WPI-MANA), National Institute for Materials Science (NIMS), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan

\* Corresponding author

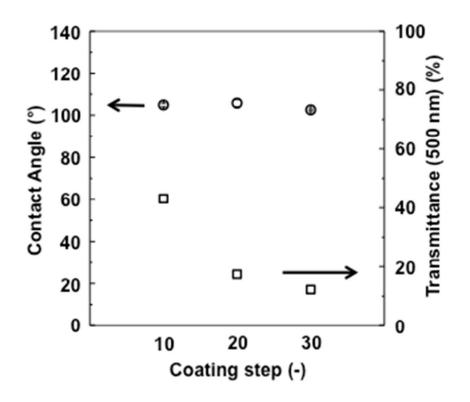
Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta, T6G 2V4, Canada

Telephone: +1-780-492-1736, Fax: +1-780-492-2881

E-mail: narain@ualberta.ca



**Figure S1.** Fourier Transform Infrared (FT-IR) spectra of the (a) SiNPa24, (b)  $NH_2$ -SiNPs24, (c) Br-SiNPs24, (d) PDP-SiNPs24, (e) SiNPs136, (f)  $NH_2$ -SiNPs136, (g) Br-SiNPs136, and (h) PDP-SiNPs136. FT-IR spectra analysis was carried out on a Nicolet8700 (Thermo), and the diffuse reflectance spectra were scanned over the wavenumber range of 4000-400 cm<sup>-1</sup>. The samples were prepared using KBr.



**Figure S2.** Contact angle of flat glass substrates (1 cm  $\times$  2.2 cm) coated with mixture suspension (ethanol, 0.05 wt%, PDP-SiNPs24/PDP-SiNPs136 ratio 1:1 wt/wt) by cast-coating. The dispersion (100  $\mu$ L = 1 step) was dropped on the glass substrates, and was dried. This coating process was repeated by objective step numbers. The coated substrates were washed with water. Transmittance of the coated glass substrates were measured by irradiation of light (wavelength 500 nm). Water drop (2  $\mu$ L , pH 10) was used for CA measurement.