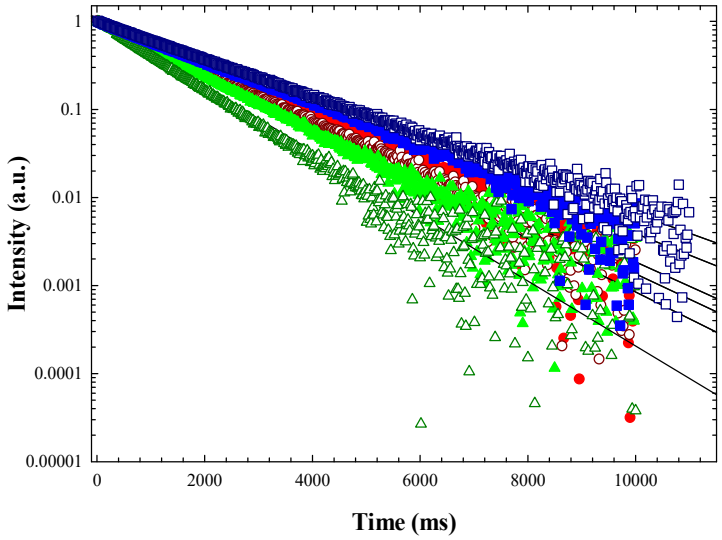

Figure S1. Relaxation decay curves of the solvent blends: EtOH/water, IPA/water, and MeOH/water. The mole fractions of EtOH in EtOH/water mixture were ~0.08 (red circles) and ~0.46 (open circles). The mole fractions of IPA in IPA/water mixture were ~0.09 (green triangles up) and ~0.47 (open triangles up). The mole fractions of MeOH in MeOH/water mixture were ~0.15 (blue squares) and ~0.63 (open squares), respectively. The solid lines through the experimental data are the single-exponential fits.

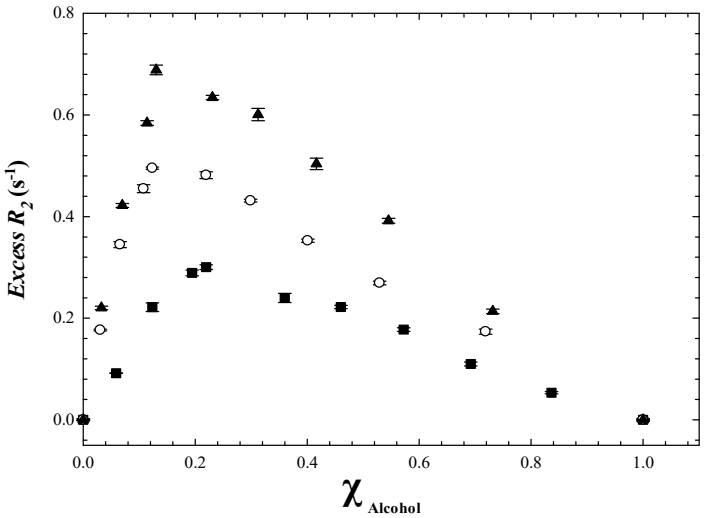

Figure S2. Excess solvent relaxation rate in blends of MeOH/water (squares), EtOH/water (circles) and IPA/water (triangles) as a function of alcohol mole fraction. The error bars are the standard deviation of three measurements for each sample.

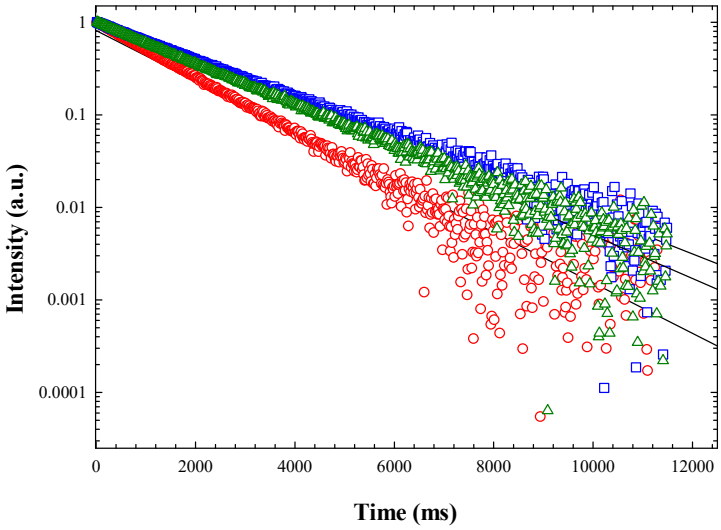

Figure S3. Relaxation decay curves of the solvent blends: EtOH/decane (circles), EtOH/toluene (squares), and EtOH/p-xylene (triangles up). The mole fractions of EtOH were equal to ~0.5, ~0.4, and ~0.43 for EtOH/decane, EtOH/toluene, and EtOH/p-xylene mixtures, respectively. The solid lines through the experimental data are the single-exponential fits.

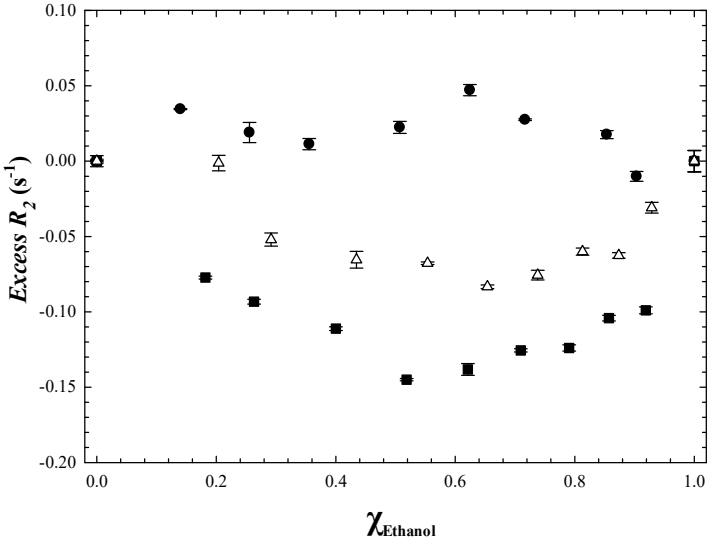

Figure S4. Relaxation rates of the solvent blends: EtOH/decane (circles), EtOH/toluene (squares), and EtOH/p-xylene (triangles) as a function of EtOH mole fraction. The error bars are the standard deviation of three measurements for each sample. The solid lines are guides to the eye.

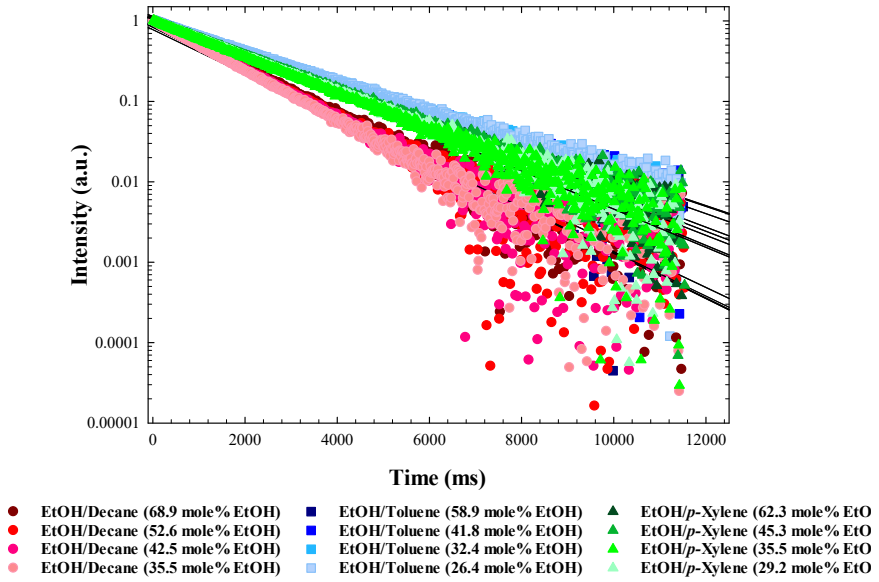

Figure S5. Relaxation decay curves of the solvent blends: EtOH/decane, EtOH/toluene, and EtOH/p-xylene. The mole fractions of EtOH in the EtOH/decane mixtures were ~ 0.68, ~0.52, ~0.42, and ~0.35, for EtOH/toluene mixtures were ~0.58, ~0.41, ~0.32, and ~0.26, and for EtOH/p-xylene mixtures were ~0.62, ~0.45, ~0.35, and ~0.29, respectively. The solid lines through the experimental data are the single-exponential fit.

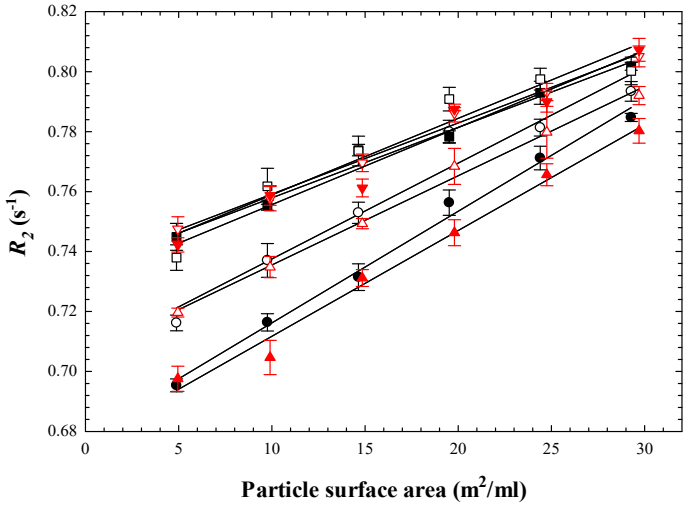

Figure S6. Relaxation rates of COS and HDK silica in EtOH/decane as a function of particle surface area (m^2/ml). The mole fractions of EtOH in EtOH/decane mixtures were equal to ~0.35 (COS (open squares) and HDK (open triangles down)), ~0.42 (COS (squares) and HDK (triangles down)), ~0.52 (COS (open circles) and HDK (open triangles up)), and ~0.68 (COS (circles) and HDK (triangles up)). The error bars are the standard deviation of three measurements for each sample. The solid lines are guides for the eye.

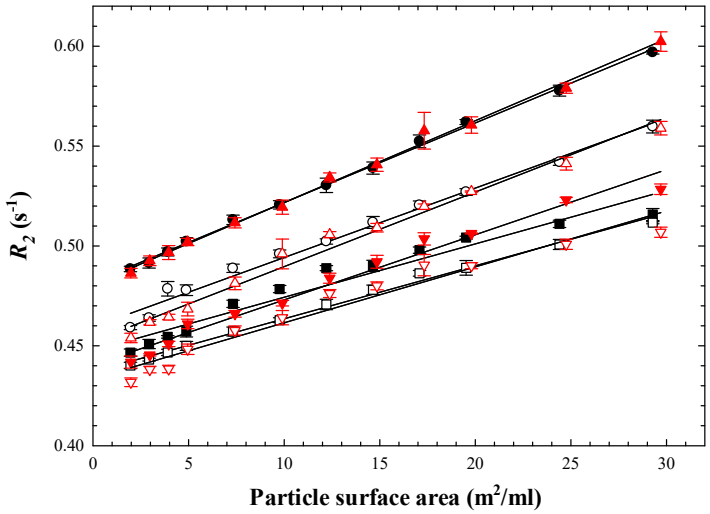

Figure S7. Relaxation rates of COS and HDK silica in EtOH/toluene as a function of particle surface area (m^2/ml). The mole fractions of EtOH in EtOH/toluene mixtures were equal to ~0.26 (COS (open squares) and HDK (open triangles down)), ~0.32 (COS (squares) and HDK (triangles down)), ~0.41 (COS (open circles) and HDK (open triangles up)), and ~0.58 (COS (circles) and HDK (triangles up)). The error bars are the standard deviation of three measurements for each sample. The solid lines are guides for the eye.

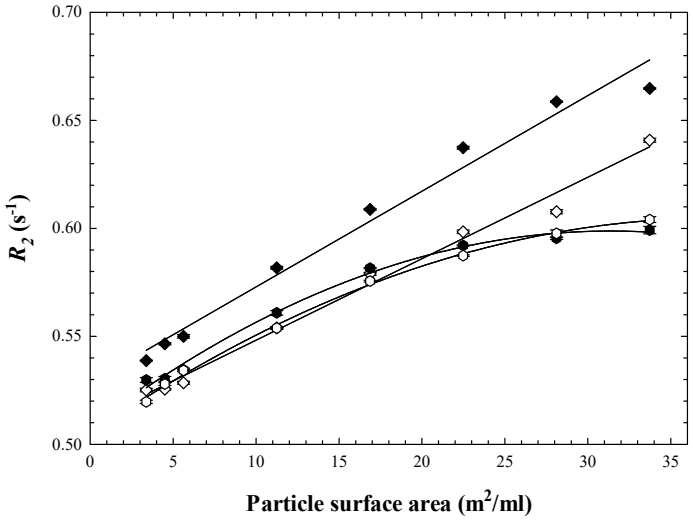

Figure S8. Relaxation rates of Aerosil in EtOH/p-xylene as a function of its surface area (m^2/ml). The mole fractions of EtOH in EtOH/p-xylene mixtures were equal to ~0.29 (open hexes), ~0.35 (hexagons), ~0.45 (open diamonds), and ~0.62 (diamonds). The error bars are the standard deviation of three measurements for each sample. The solid lines are guides for the eye.

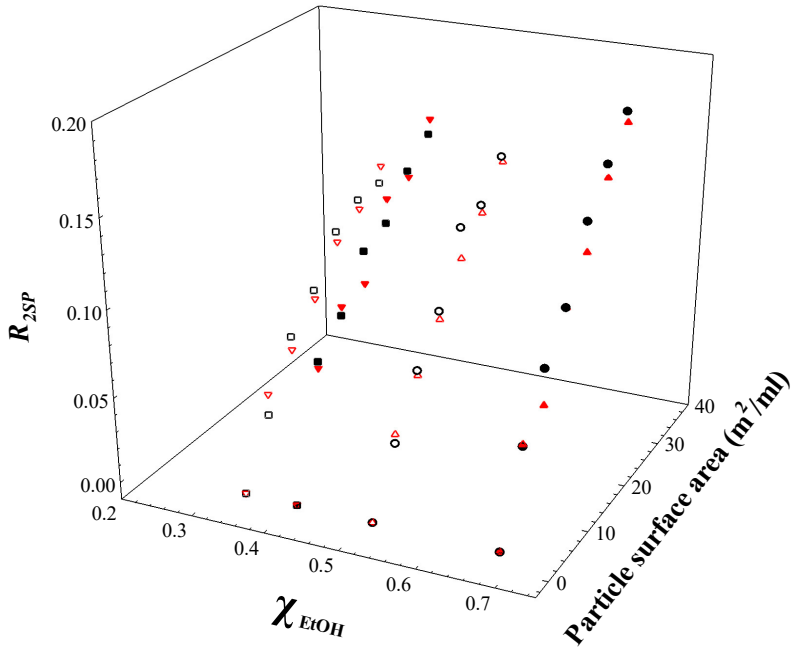

Figure S9. Solvent specific relaxation rates of COS and HDK silica dispersions as a function of particle surface area (m^2/ml). The mole fractions of EtOH in EtOH/decane mixtures were equal to ~0.35 (COS (open squares) and HDK (open triangles down)), ~0.42 (COS (squares) and HDK (triangles down)), ~0.52 (COS (open circles) and HDK (open triangles up)), and ~0.68 (COS (circles) and HDK (triangles up)). The R_{2SP} data for both COS and HDK silica are normalised to the relaxation rate of the equivalent EtOH/decane mixture. The error bars are the standard deviation of three measurements for each sample. The solid lines are guides for the eye.

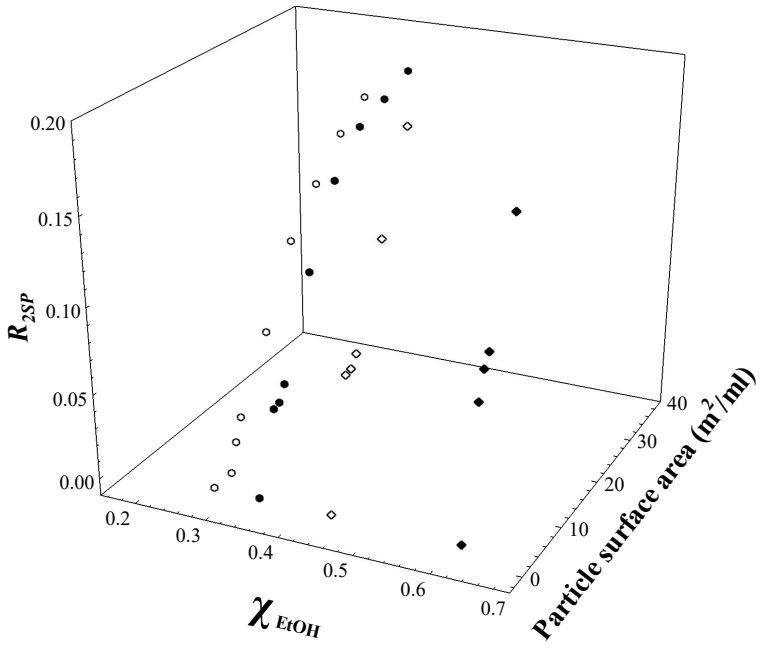

Figure S10. Solvent specific relaxation rate of Aerosil dispersions as a function of particle surface area (m^2/ml). The mole fractions of EtOH in EtOH/p-xylene mixtures were equal to ~0.29 (open hexagons), ~0.35 (hexagons), ~0.45 (open diamonds), and ~0.62 (diamonds). The R_{2SP} data for Aerosil are normalised to the relaxation rate of the equivalent EtOH/p-xylene mixture. The error bars are the standard deviation of three measurements for each sample. The solid lines are guides for the eye.