Supporting information for article:

Influence of polychromaticity on Particle Structural Determination in Small Angle X-Ray Scattering

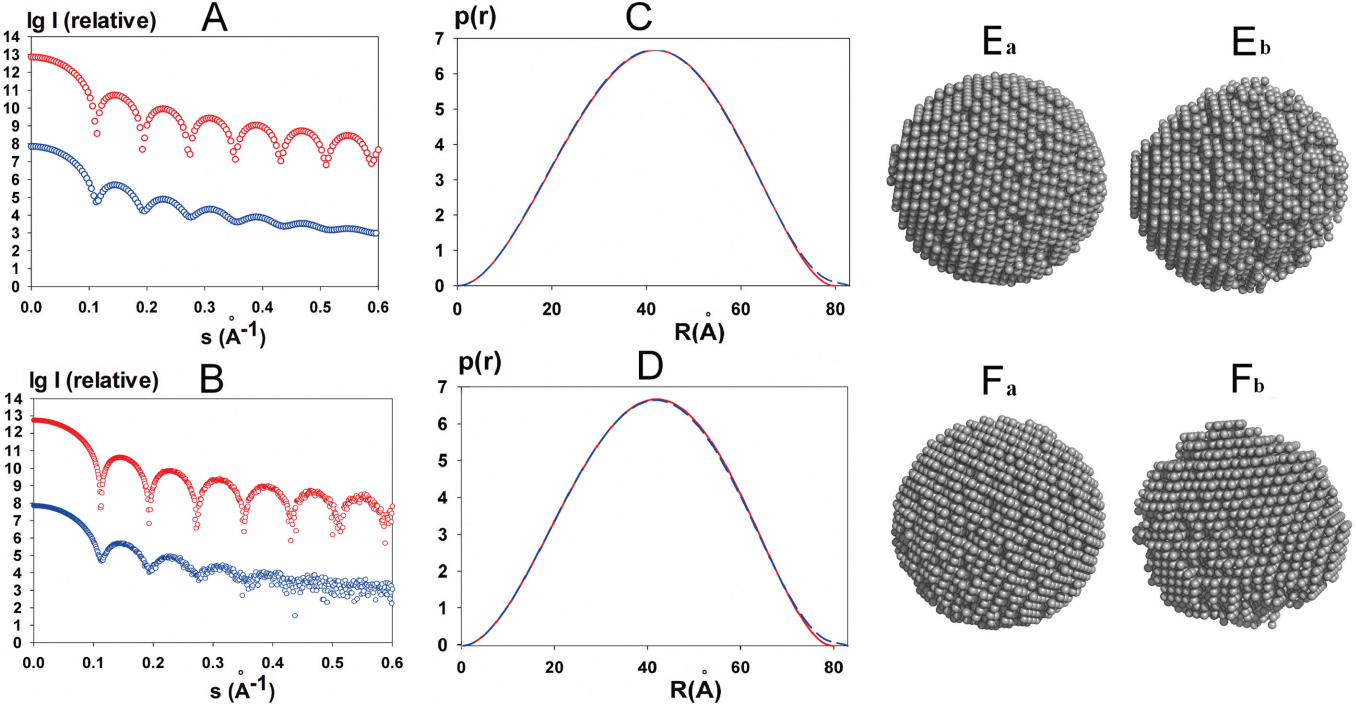**Wenjia Wang, Eleonora V. Shtykova, Vladimir V. Volkov, Guangcai Chang, Lianhui Zhang, Yuhui Dong and Peng Liu**

Fig. S1. A and B are the simulated scattering curves of a sphere (diameter = 80Å) without and with noise, respectively. C and D are the p(r) functions obtained from the scattering curves shown in A and B, respectively. In A, B, C and D, the red curves represent the data without smear effect, while the blue curves are the data smeared by Gaussian functions with FWHM of 0.1. E and F are the reconstructed models using p(r) functions shown in C and D, respectively. Ea and Fa are reconstructed by the simulated data without smear effect, while Eb and Fb are reconstructed by the smeared data. The average NSD values between the reconstructed models and the initial ideal models are 0.439, 0.458, 0.484 and 0.489 for Ea, Fa, Eb and Fb, respectively.

Table S1. Structural parameters from the noise-free and the noise-added data.

	I_0	Volume	R_g(Guinier)	R_g(GNOM)	D_{max}
Structural parameters from the **noise-free data**					
$\Delta E/E=0$	$715.86*10^8$	$249.44*10^3$	31.4	30.95	80
$\Delta E/E=0.1$	$715.86*10^8$	$249.44*10^3$	31.5	31.06	83
Structural parameters from the **noise-added data**					
$\Delta E/E=0$	$715.16*10^8$	$263.78*10^3$	31.4	30.94	80
$\Delta E/E=0.1$	$715.90*10^8$	$249.93*10^3$	31.5	31.03	83