

## Supporting Information

### **Solution Structure of Copper-seamed C-alkylpyrogallol[4]arene Nanocapsules with Varying Chain Lengths**

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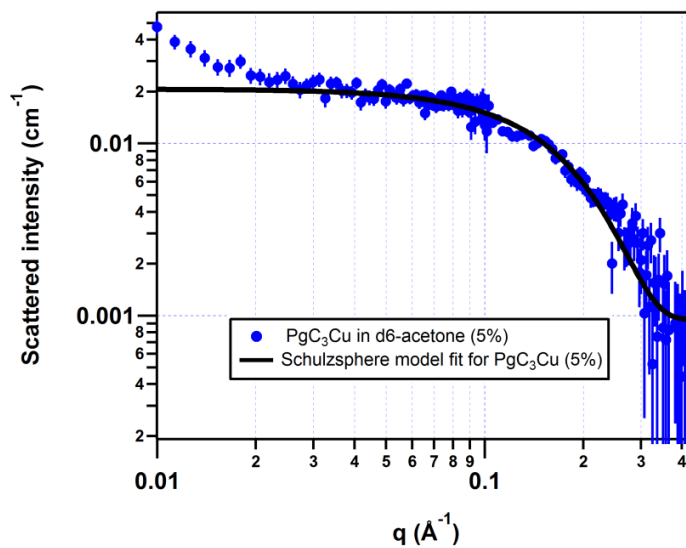
In this section of supporting information, we report the full sets of fitting parameters of the Schulz sphere fit for PgC<sub>3</sub>Cu hexamer and global Schulz sphere fits (mass fractions of 1% and 5%) for the PgC<sub>6</sub>Cu and PgC<sub>9</sub>Cu hexamers. Fitted values reported as (global) are common to both concentrations. Other parameters are local to the listed data set. All uncertainties reported are one standard deviation of that fitted parameter.

Scattering length densities (SLD):

Sample	Molecular formula	Density	wavelength (Å)	SLD
PgC <sub>3</sub> Cu hexamer	C <sub>240</sub> H <sub>216</sub> O <sub>72</sub> Cu <sub>24</sub>	1.2	6	1.74E-06
PgC <sub>6</sub> Cu hexamer	C <sub>312</sub> H <sub>360</sub> O <sub>72</sub> Cu <sub>24</sub>	1.2	6	1.42E-06
PgC <sub>9</sub> Cu hexamer	C <sub>384</sub> H <sub>504</sub> O <sub>72</sub> Cu <sub>24</sub>	1.2	6	1.18E-06

(1) Schulz sphere fit results for  $\text{PgC}_3\text{Cu}$  hexamer

$\text{PgC}_3\text{Cu}$  in  $d_6$ -acetone, mass fraction of 5%

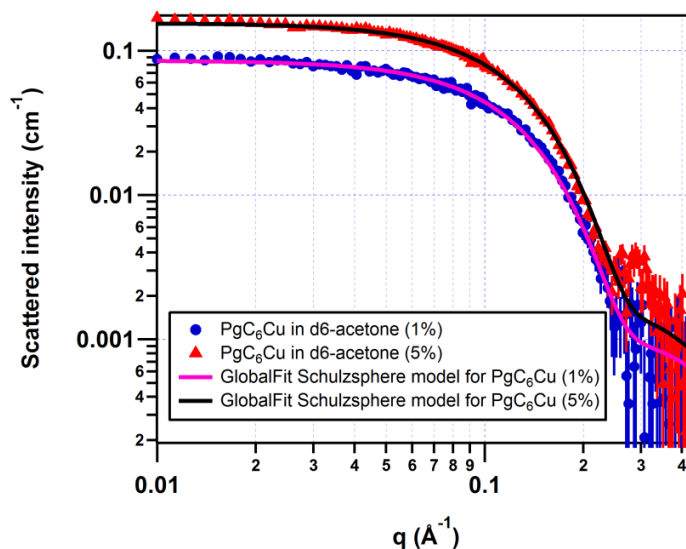


Volume Fraction	$0.00198 \pm 2.31\text{e-}05$
Mean radius ( $\text{\AA}$ )	$11.12 \pm 0.017$
Polydispersity ( $\sigma_r/r$ )	$0.15 \pm 0.00015$
SLD sphere ( $\text{\AA}^{-2}$ )	$1.74\text{e-}06$ (held fixed)
SLD solvent ( $\text{\AA}^{-2}$ )	$5.39\text{e-}06$ (held fixed)
bkg ( $\text{cm}^{-1} \text{sr}^{-1}$ )	$0.000854 \pm 8.92\text{e-}05$

$\text{Sqrt}(X^2/N) = 1.42$

Fitted range = [0,173] =  $0.009974 < Q < 0.4385$

(2) Global polydisperse Schulz sphere fit results for  $\text{PgC}_6\text{Cu}$  hexamer



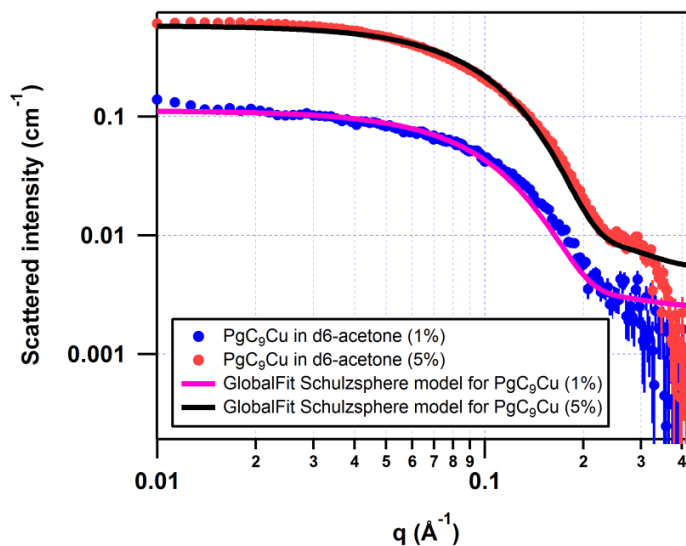
**Data Set:  $\text{PgC}_6\text{Cu}$  in  $d_6$ -acetone, mass fraction of 1%**

Volume fraction	$0.00269 \pm 2.38 \cdot 10^{-5}$
Mean radius ( $\text{\AA}$ )	$14.89 \pm 0.15$
Polydispersity ( $\sigma_r/r$ )	$0.18 \pm 0.0067$
SLD sphere ( $\text{\AA}^{-2}$ )	$1.42 \cdot 10^{-6}$ (held fixed)
SLD solvent ( $\text{\AA}^{-2}$ )	$5.39 \cdot 10^{-6}$ (held fixed)
Bkg ( $\text{cm}^{-1} \text{sr}^{-1}$ )	$0.000469 \pm 9.09 \cdot 10^{-5}$

**Data Set:  $\text{PgC}_6\text{Cu}$  in  $d_6$ -acetone, mass fraction of 5%**

Volume fraction (scale)	$0.00489 \pm 4.01 \cdot 10^{-5}$
Mean radius ( $\text{\AA}$ )	$14.89 \pm 0.15$ (global)
Polydispersity ( $\sigma_r/r$ )	$0.18 \pm 0.0067$ (global)
SLD sphere ( $\text{\AA}^{-2}$ )	$1.42 \cdot 10^{-6}$ (held fixed)
SLD solvent ( $\text{\AA}^{-2}$ )	$5.39 \cdot 10^{-6}$ (held fixed)
Bkg ( $\text{cm}^{-1} \text{sr}^{-1}$ )	$0.000545 \pm 0.000105$
Sqrt( $\chi^2/N$ )	1.29

(3) Global polydisperse Schulz sphere fit results for  $\text{PgC}_9\text{Cu}$  hexamer



**Data Set:  $\text{PgC}_9\text{Cu}$  in d6-acetone, mass fraction of 1%**

Volume fraction	$0.0017 \pm 6.48\text{e-}06$
Mean radius ( $\text{\AA}$ )	$17.59 \pm 0.015$
Polydispersity ( $\sigma_r/r$ )	0.2 (held fixed)
SLD sphere ( $\text{\AA}^{-2}$ )	$1.18\text{e-}06$ (held fixed)
SLD sphere ( $\text{\AA}^{-2}$ )	$5.39\text{e-}06$ (held fixed)
Bkg ( $\text{cm}^{-1} \text{sr}^{-1}$ )	$0.00247 \pm 8.12\text{e-}05$

**Data Set:  $\text{PgC}_9\text{Cu}$  in d6-acetone, mass fraction of 5%**

Volume fraction	$0.0092 \pm 1.83\text{e-}05$
Mean radius ( $\text{\AA}$ )	$17.59 \pm 0.015$ (global)
Polydispersity ( $\sigma_r/r$ )	0.2 (held fixed)
SLD sphere ( $\text{\AA}^{-2}$ )	$1.18\text{e-}06$ (held fixed)
SLD sphere ( $\text{\AA}^{-2}$ )	$5.39\text{e-}06$ (held fixed)
Bkg ( $\text{cm}^{-1} \text{sr}^{-1}$ )	$0.00506 \pm 9.29\text{e-}05$
Sqrt( $\chi^2/N$ )	4.78

NOTE: During the global polydisperse Schulz sphere fit for the  $\text{PgC}_9\text{Cu}$  hexamer at mass fractions of 1% and 5%, the polydispersity was held fixed at 0.2 to ensure that the fitted mean radius is directly comparable to  $\text{PgC}_3\text{Cu}$  and  $\text{PgC}_6\text{Cu}$ .