

# IUCrJ

**Volume 9 (2022)**

**Supporting information for article:**

**Formation and stabilization mechanism of mesoscale clusters in solution**

**Shuyi Zong, Jingkang Wang, Xin Huang, Hao Wu, Qi Liu and Hongxun Hao**

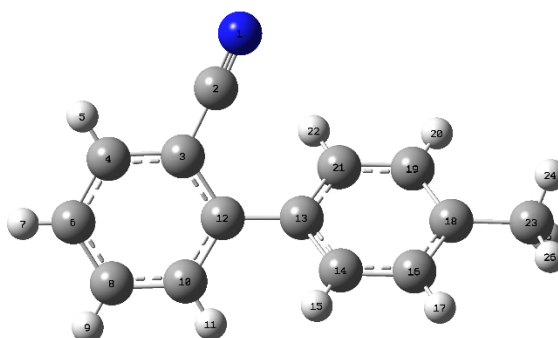
## S1. Dimerization model

The dimerization model is as follows

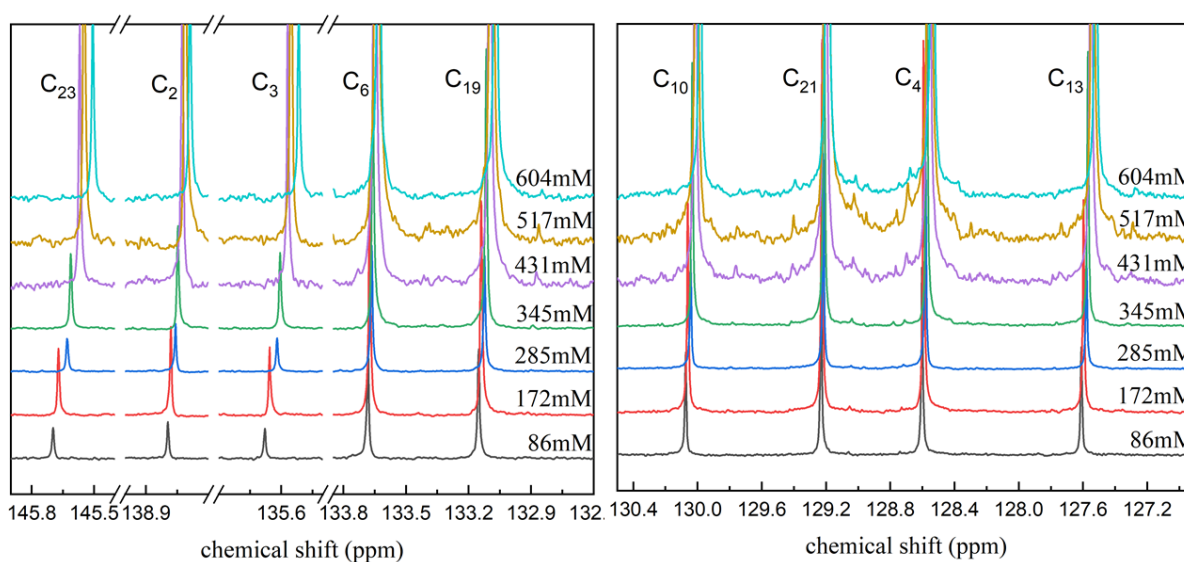
$$\delta_{obs} = \delta_m \frac{c_m}{c_{tot}} + \delta_d \frac{2k_d c_m^2}{c_{tot}} \quad (S1)$$

$$c_{tot} = c_m + 2k_d c_m^2 \quad (S2)$$

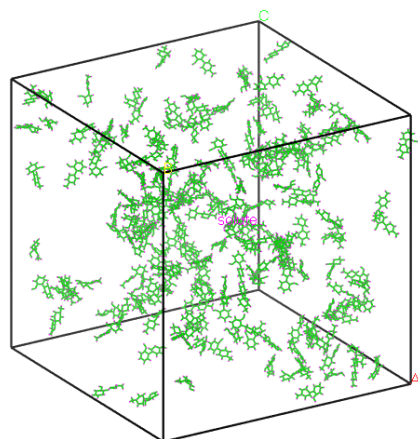
where  $\delta_{obs}$  refers to the observed chemical shift,  $\delta_m$  and  $\delta_d$  refer to the chemical shift of monomers and dimers, respectively,  $c_{tot}$  is the total concentration of OTBN,  $c_m$  is the concentration of monomer,  $k_d$  refers to the dimerization constant.



**Figure S1** Molecular structure of OTBN.



**Figure S2**  $^{13}\text{C}$  NMR chemical shift changes of OTBN as a function of concentration in methanol.



**Figure S3** Molecular dynamics results of OTBN in methanol (The solvent molecules were hidden).