Tuning Nanostructure Dimensions with Supramolecular Twisting

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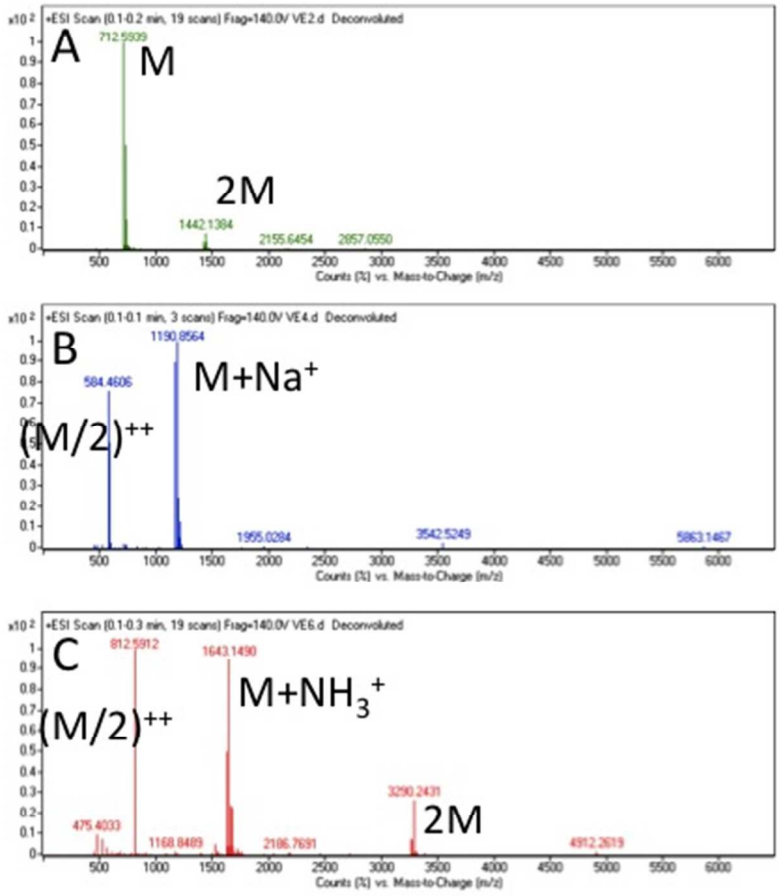
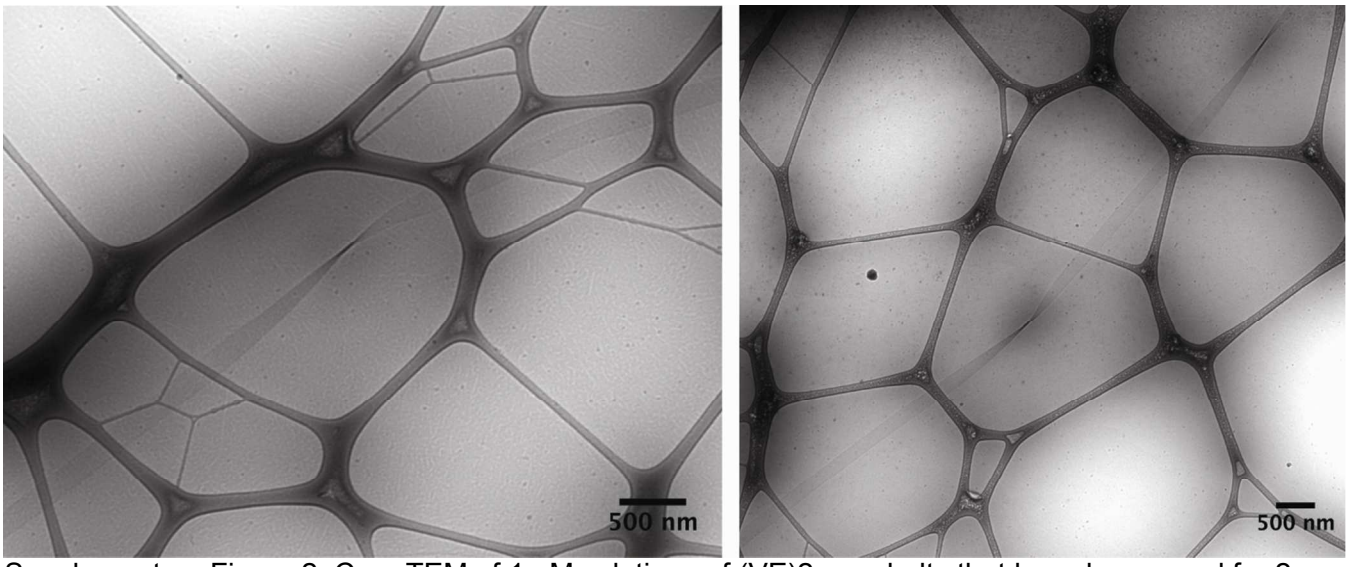
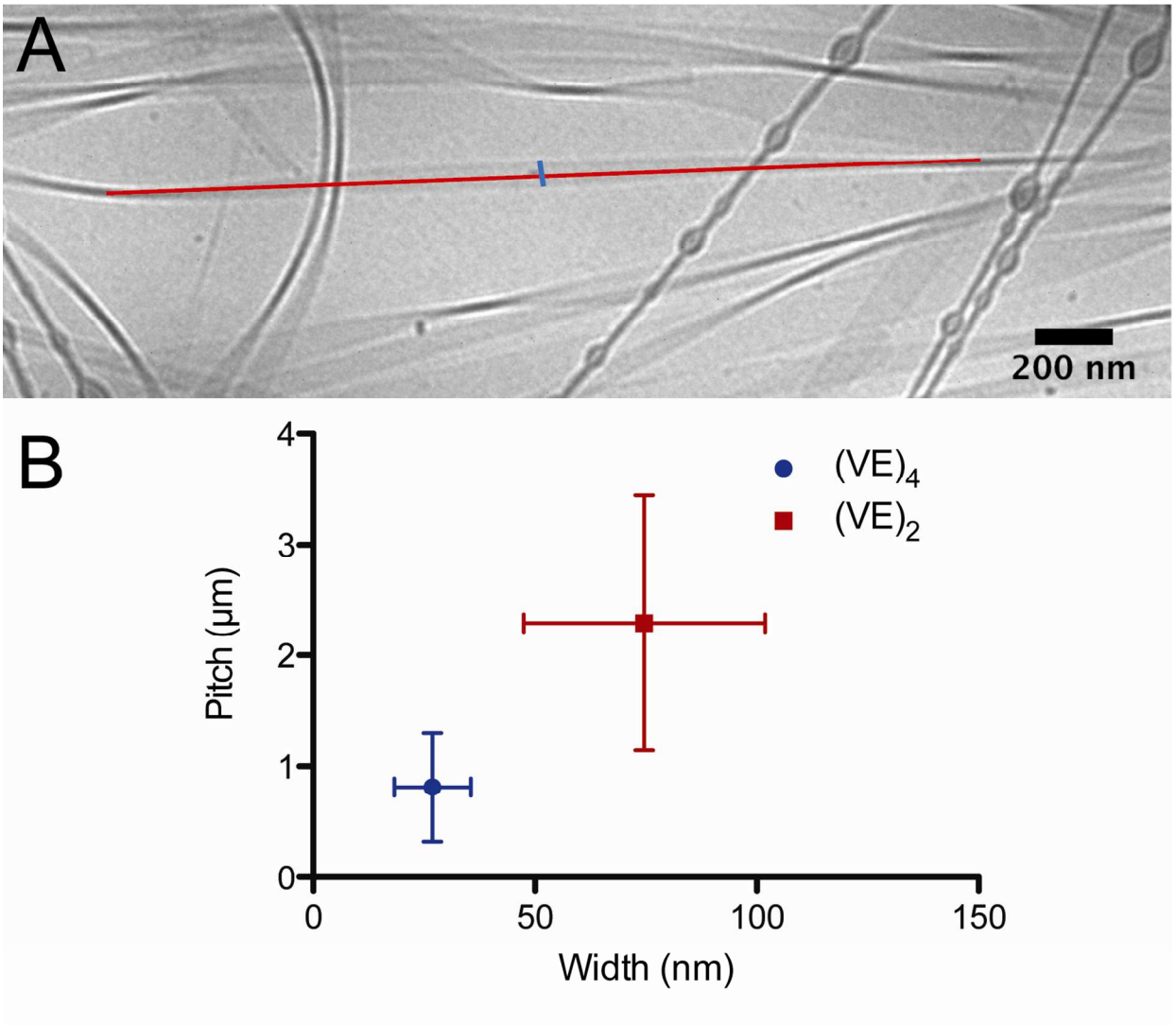
Supplementary Information:



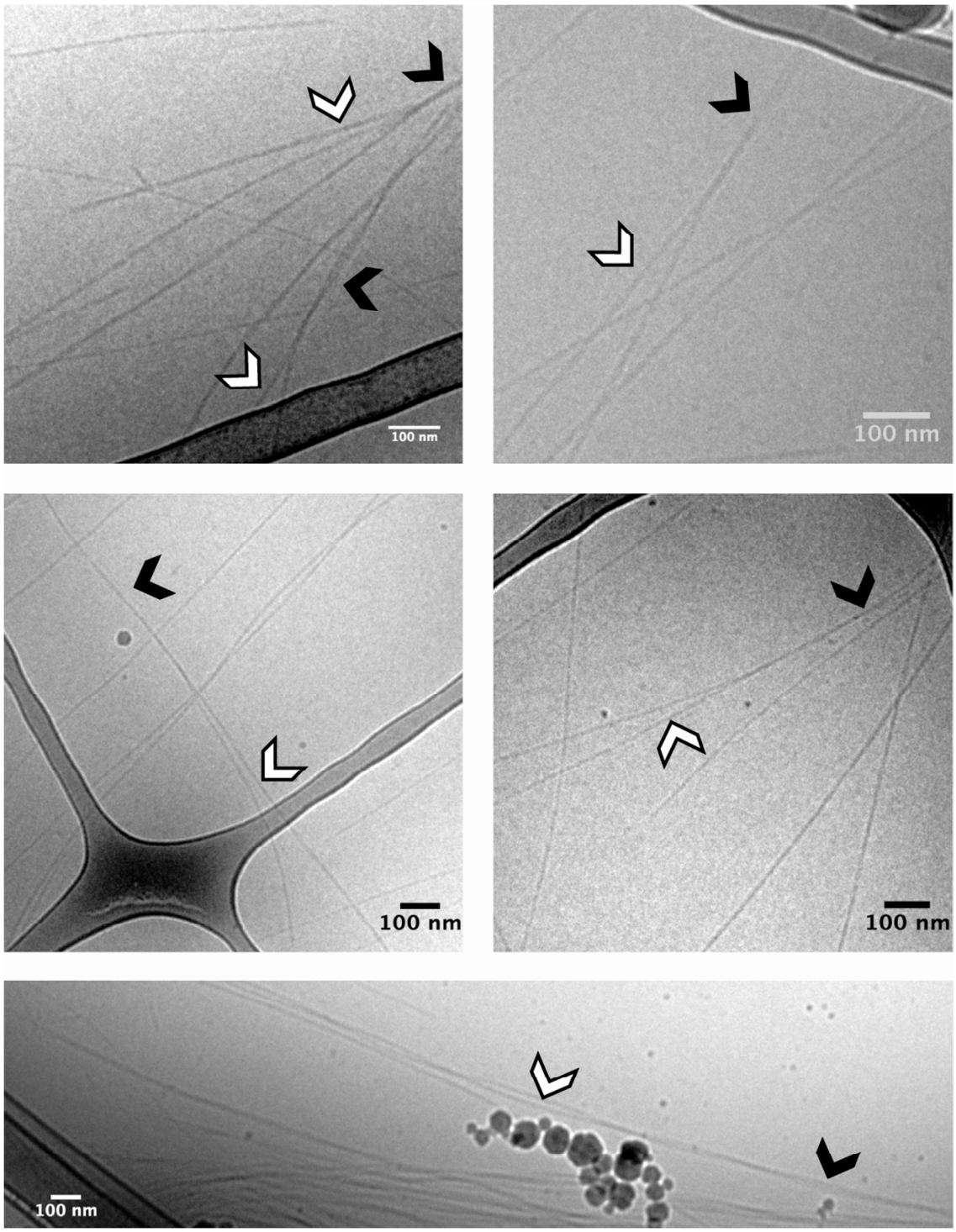
Supplementary Figure 1: ESI MS of $(VE)_2$ (A), $(VE)_4$ (B), and $(VE)_6$ (C) after purification by HPLC.



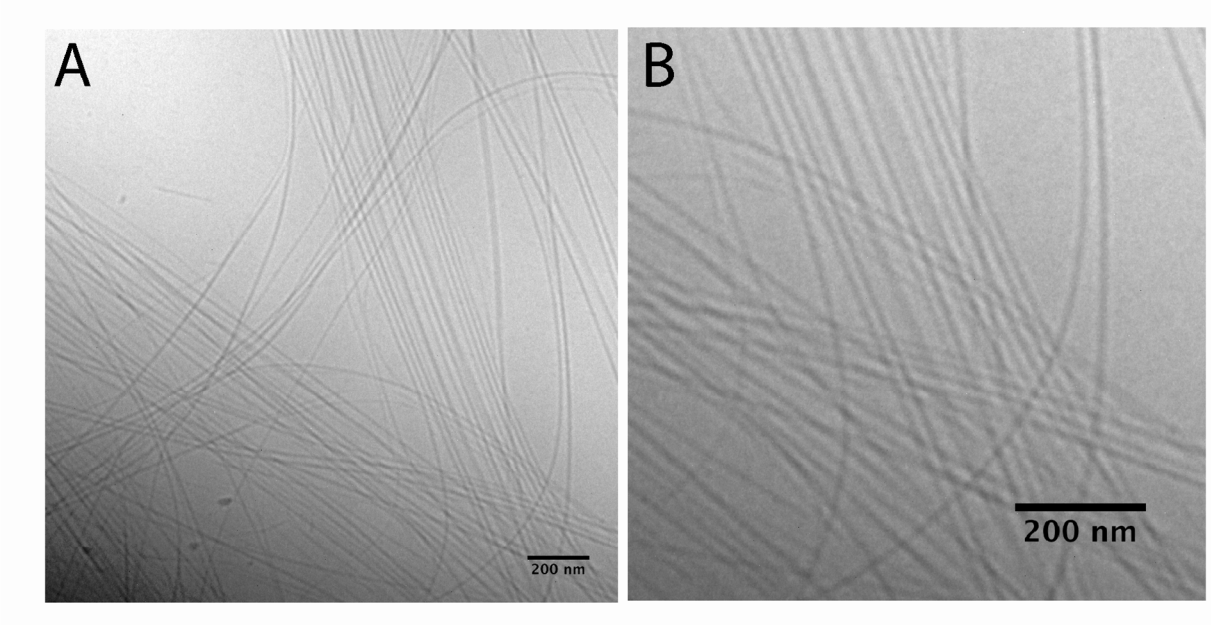
Supplementary Figure 2: Cryo-TEM of 1mM solutions of (VE)2 nanobelts that have been aged for 2 weeks.



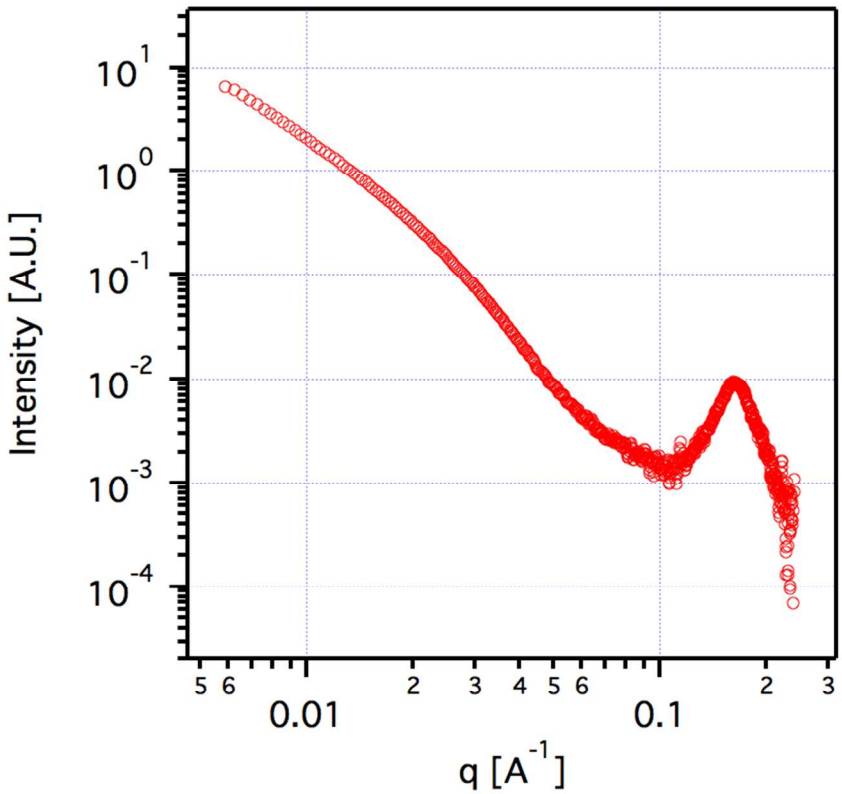
Supplementary Figure 3: (A) Diagram of how pitch and width were measured indicated by the red and blue lines, respectively. (B) Pitch is graphed as a function of width, and shows a general positive correlation, as indicated by the linear trendlines for both $(VE)_2$ and $(VE)_4$.



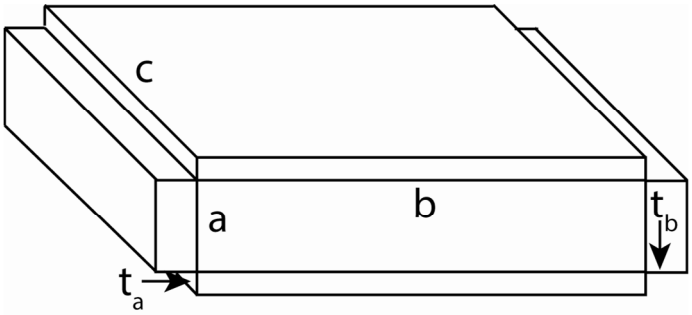
Supplementary Figure 4: Splitting of $(VE)_6$ is observed by cryo-TEM. Black arrowheads point to areas of darker contrast where multiple structures appear together. White arrowheads show where the structures have begun to split into smaller, cylindrical components.



Supplementary Figure 5: Cryo-TEM of $(VE)_6$ (A) and zoomed in version of the same image (B). Structures with higher contrast are visible in the image, but the majority of structures appear to have the same contrast.

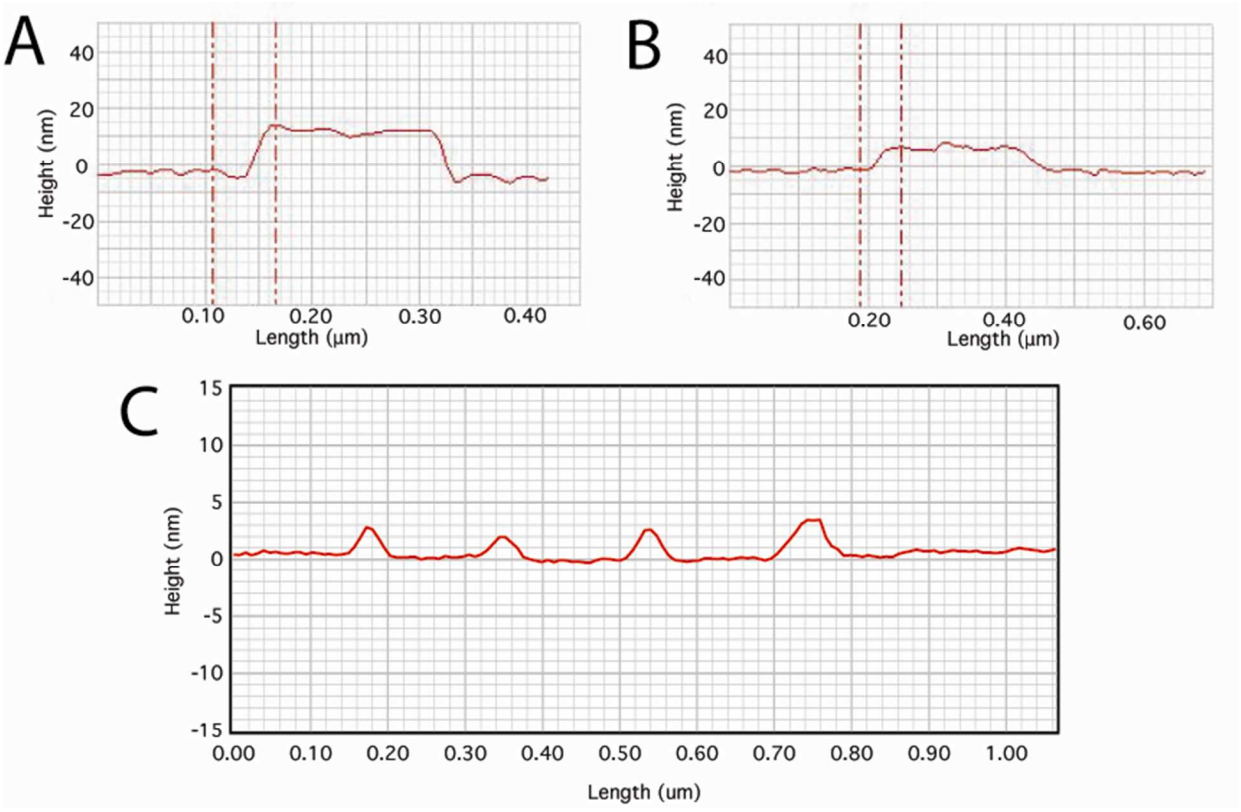


Supplementary Figure 6: 1D SAXS pattern of $(VE)_2$ shows bragg peak at high-q. The d-spacing corresponds to 3.9 nm.

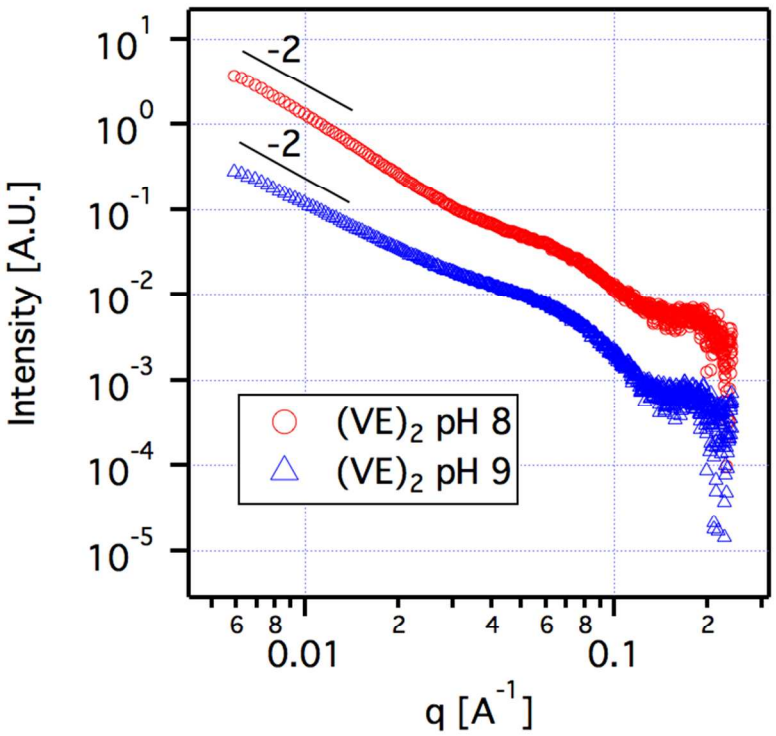


	$(VE)_2$	$(VE)_4$	$(VE)_6$
a	37	38	81
b	1420	210	118
c	40000	40000	40000
t_a	15	4.1	3.4
t_b	10.7	1.2	9.0

Supplementary Figure 7: Diagram of core-shell parallelpiped with values (in Å) for each of the molecules. In all cases, t_c was set to zero, and a<b<c for the parallelpiped. Because of the large number of parameters, we held as many parameters constant as possible. The electron density of the shell components for a and b were kept equal in all cases, and the long axis, c, was set to 1.5 μm.



Supplementary Figure 8: AFM height profiles of $(VE)_2$ (A), $(VE)_4$ (B), and $(VE)_6$ (C).



Supplementary Figure 9: At higher pH, a slight decrease is slope is visible between pH 8 and pH 9, going from -2 to -1.8. Intensity has been arbitrarily changed for clarity.