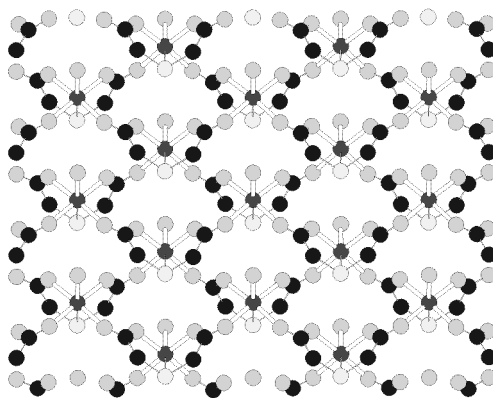


Synthesis and Thermodecomposition Study of $\text{Zn}(\text{tda})\text{H}_2\text{O}$ (tda = thiodiacetate). Ming-Chen Wu¹, Hwo Shuenn Sheu², Chi-Shen Lee¹, ¹Dept. of Applied Chemistry and Inst. of Molecular Science, National Chiao Tung Univ., 1001 Ta-Hsueh Rd., Hsinchu 30010, Taiwan, ²National Synchrotron Radiation Research Center, Taiwan.

A novel two dimensional coordination polymer $\text{Zn}(\text{tda})\text{H}_2\text{O}$ (tda = $\text{O}(\text{CH}_2\text{COO})_2^{2-}$) was synthesized under hydrothermal condition. The compound crystallized in the monoclinic space group $P2_1$ with $a = 16.437 \text{ \AA}$, $b = 5.2098 \text{ \AA}$, $c = 16.437 \text{ \AA}$, $\beta = 114.201^\circ$, $V = 1060.2(6) \text{ \AA}^3$, and $Z = 4$. The structure features two dimensional, noncentrosymmetric networks with a pseudo hexagonal network of Zn(II) coordinated by tda and water molecules. The $\text{Zn}(\text{tda})\text{H}_2\text{O}$ decomposed at $T > 550 \text{ C}$ to form ZnO sponge with the surface area $\sim 30 \text{ m}^2/\text{g}$, which make it an attractive precursor for one step synthesis of nanoporous ZnO.

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The two dimensional structure of $\text{Zn}(\text{tda})\text{H}_2\text{O}$ projected along [010].