

Supporting Information

Lone Pairs as Chemical Scissors in New Antimony Oxychlorides, $\text{Sb}_2\text{ZnO}_3\text{Cl}_2$ and $\text{Sb}_{16}\text{Cd}_8\text{O}_{25}\text{Cl}_{14}$

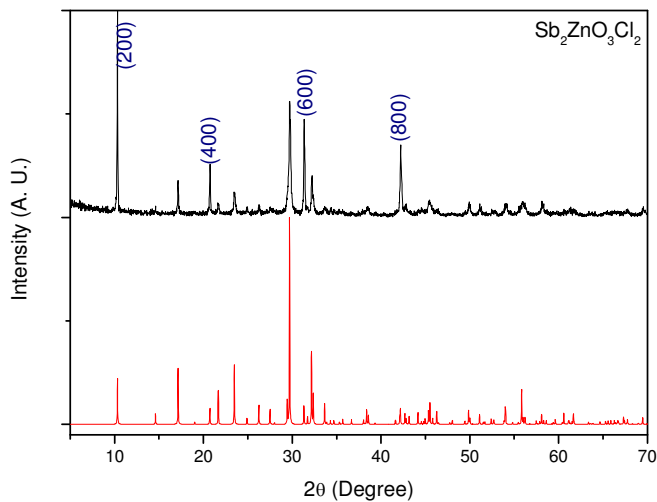
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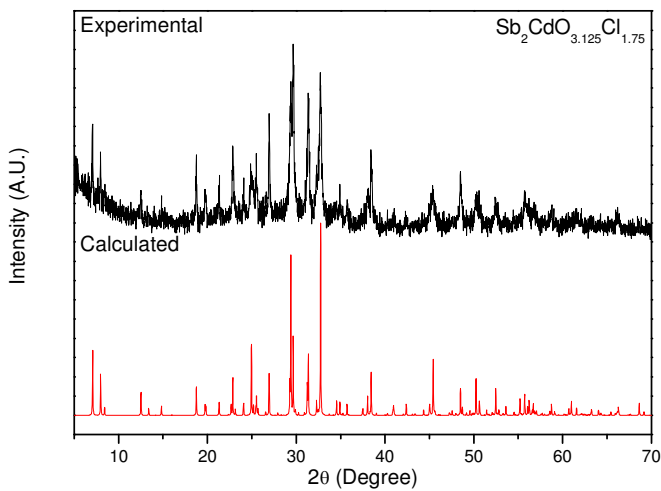
- S1. Calculated and observed powder X-ray diffraction pattern for $\text{Sb}_2\text{ZnO}_3\text{Cl}_2$
- S2. Calculated and observed powder X-ray diffraction pattern for $\text{Sb}_{16}\text{Cd}_8\text{O}_{25}\text{Cl}_{14}$
- S3. Thermogravimetric data for $\text{Sb}_2\text{ZnO}_3\text{Cl}_2$
- S4. Thermogravimetric data for $\text{Sb}_{16}\text{Cd}_8\text{O}_{25}\text{Cl}_{14}$
- S5. IR spectrum for $\text{Sb}_2\text{ZnO}_3\text{Cl}_2$
- S6. IR spectrum for $\text{Sb}_{16}\text{Cd}_8\text{O}_{25}\text{Cl}_{14}$

S1. Calculated and observed powder X-ray diffraction pattern for $\text{Sb}_2\text{ZnO}_3\text{Cl}_2$

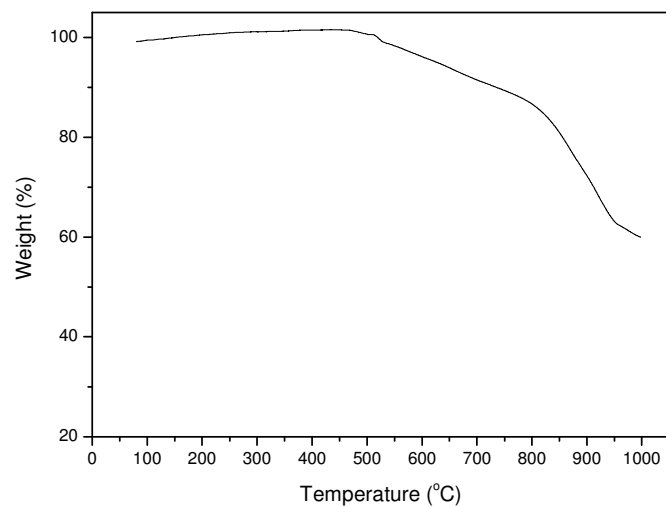


Since $\text{Sb}_2\text{ZnO}_3\text{Cl}_2$ has a layered structure along the a -axis, a strong preferred orientation is observed in the experimental powder X-ray diffraction pattern. The (200), (400), (600), and (800) peaks are all intense compared to those of the calculated pattern.

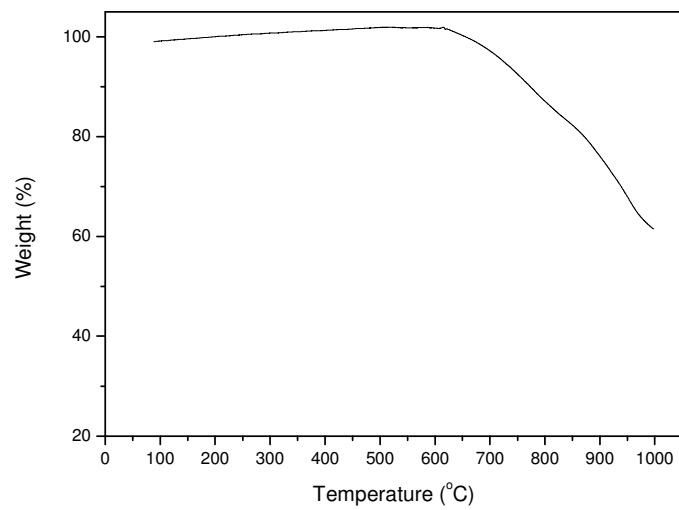
S2. Calculated and observed powder X-ray diffraction pattern for $\text{Sb}_{16}\text{Cd}_8\text{O}_{25}\text{Cl}_{14}$



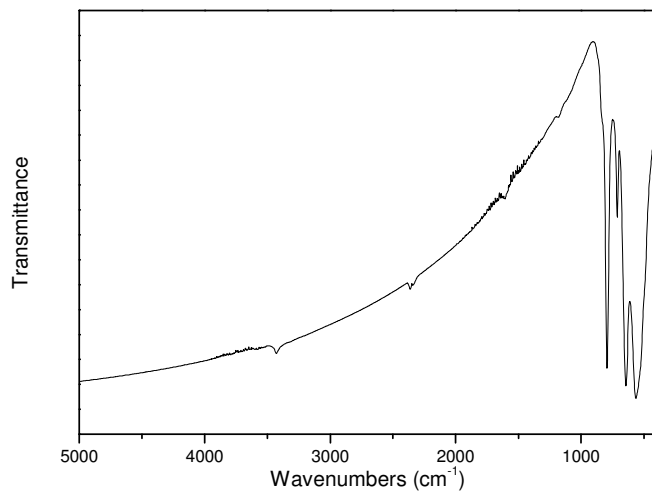
S3. Thermogravimetric analysis diagram for $\text{Sb}_2\text{ZnO}_3\text{Cl}_2$



S4. Thermogravimetric analysis diagram for $\text{Sb}_{16}\text{Cd}_8\text{O}_{25}\text{Cl}_{14}$



S5. IR spectrum for $\text{Sb}_2\text{ZnO}_3\text{Cl}_2$



S6. IR spectrum for $\text{Sb}_{16}\text{Cd}_8\text{O}_{25}\text{Cl}_{14}$

