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## Synthesis and characterization of new quaternary niobium selenites

Bongsu Kim, Youngkwon Kim and Kang Min Ok  
Chung-Ang University, Republic of Korea

Single crystals and pure polycrystalline samples of new alkali metal niobium selenites have been prepared through hydrothermal and standard solid-state reaction techniques. Single crystal X-ray diffraction was used to determine crystal structures of all four materials.

While  $\text{NaNbO}(\text{SeO}_3)_2$  is configured with corner-shared zigzag chains of  $\text{NbO}_6$  octahedra and  $\text{SeO}_3$  intrachain connectors, three isostructural  $\text{ANbO}(\text{SeO}_3)_2$  ( $A = \text{K, Rb, and Cs}$ ) exhibit a layered structure that is composed of distorted  $\text{NbO}_6$  octahedra and  $\text{SeO}_3$  polyhedra.

Detailed structural analysis suggests that the size and the coordination environment of alkali metal cations particularly affect the backbone geometries and the dimensions of this materials. Full characterizations including X-ray diffraction, Scanning Electron Microscopy (SEM), infrared and UV-Vis diffuse reflectance spectroscopies, thermal analyses, and dipole moment calculations for the new alkali metal niobium selenites will be presented.

Moreover, The future plan about similar compounds using  $\text{Te}^{4+}$ ;  $\text{ANbO}(\text{TeO}_3)_2$  ( $A = \text{Na, K, Rb, and Cs}$ ) will be described.

### Biography

Bongsu Kim has completed his bachelor degree at the age of 26 years from An-dong University School and now he has been studying for master degree from Chung-Ang University School of Seoul. While His major is solid chemistry. He focus on the study about new materials of Non-Centro Symmetric(NCS) and Metal-Organic Frameworks(MOFs).

[drddrdr@naver.com](mailto:drddrdr@naver.com)

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