

Antimony oxides: the pyrochlore-type structure revisited Maria-Ondina Figueiredo, *Crystallography and Mineralogy Centre, IICT, & CENIMAT, New Univ. Lisbon, 2829-516 Caparica, Portugal*. E-mail: crysmin@clix.pt

Antimony oxides display a variety of structural arrangements with different stoichiometries resulting from two stable speciations for Sb ions. They commonly occur as minerals with well known crystal structure, but there are still questions regarding stibiconite - a very rare yellow mineral with pyrochlore-type structure and approximate formula $\text{Sb}_3\text{O}_6(\text{OH})$ [1]. Great interest has been focused on synthetics because of antimony speciation in relation to color and crystal structure [2], and important ion exchange properties of Sb-pyrochlores were recently pointed out [3].

When studying yellow glazes from majolica-type tiles using X-ray absorption spectroscopy at the Sb K-edge [4], the possibility of an Sb-pyrochlore being the final responsible for the actual coloring was advanced, despite antimony being added during the manufacture process as bindheimite, $\text{Sb}_2\text{Pb}_2\text{O}_7$ (*giallo di Napoli*).

An analysis is presented on the two possible crystallographic descriptions for a pyrochlore-type array under the usual cubic space group that could account for an anomalous intensification of 111 reflection for Sb-pyrochlore within the glaze and simultaneously correlate with XANES data.

[1] Vitaliano C.J., Mason B., *Amer. Min.*, 1952, **37**, 982. [2] Stewart, D.J., Knop, O., Ayasse, C., Woodhams, F.W.D., *Canad. J. Chem.*, 1972, **50**, 690. [3] Luca V., Griffith, C.S., Blackford, M.G., Hanna, J.V., *J. Mat. Chem.*, 2005, **15**, 564. [4] Figueiredo, M.O., Veiga, J.P., Silva, T.P., Mirao, J.P., Pascarelli, S., *SRMS-4*, August 23-28, 2004, Grenoble/France; poster.