



Contribution ID: 229

Type: Young Crystallographers Lightning Talks(+poster)

Topochemical conversion of layered tungstates: an in-situ Raman spectroscopy and total scattering study

Tuesday, 15 March 2022 17:55 (20 minutes)

The conversion of $\text{Bi}_2\text{W}_2\text{O}_9$ to $\text{H}_2\text{W}_2\text{O}_7$ via HCl treatment has been investigated with in-situ Raman spectroscopy and total scattering / PDF analysis. Previous reports on the selective leaching mechanism of the bismuth oxide interlayer could be verified on the basis of the atomic structure. Our study additionally reveals different rates for the interlayer break-down and subsequent realignment processes resulting in a loss of structural coherence and thus long-range order.

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Session Classification: Postersession

Track Classification: Young crystallographers Lightning Talks