

Abstract Submitted
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FTIR, Raman, and XPS Studies of a Thioindigo/Palygorskite Pigment WILLIAM DURRER, FELICIA MANCIU, Physics Department, ALEJANDRA RAMIREZ, Materials Research and Technology Institute and Chemistry Department, JAYESH GOVANI, Physics Department, RUSSELL CHIANELLI, Materials Research and Technology Institute and Chemistry Department, University of Texas at El Paso, TX 79968 — We present FTIR, Raman and XPS studies of interactions between powdered thioindigo and palygorskite when these two substances are mixed and heated to produce a purple pigment similar to Maya Blue. In an ongoing investigation, we study the question of how thioindigo binds to palygorskite. We also address how such binding might be affected by varying the proportion of dye relative to that of the mineral, and by varying the length of heating time used in preparation. FTIR and Raman results corroborate to provide evidence of C=O bonding disruption in the dye. XPS results, though more difficult to interpret, support the FTIR and Raman results. They reveal several different binding states of the key elemental components oxygen, aluminum, and sulfur. Of these, the higher energy binding states of oxygen and aluminum are, most likely, indicative of strong metal-C=O interaction.

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